EUROPEAN CENTRAL BANK

EUROSYSTEM

Annual Report

2016

Contents

Foreword

2016 was in many ways a difficult year, but it was also marked by signs of progress. Though the year began shrouded in economic uncertainty, it ended with the economy on its firmest footing since the crisis.

Yet as economic uncertainty subsided, political uncertainty increased. We faced a series of geopolitical events that will shape our policy landscape for years to come. This year's Annual Report describes how the ECB navigated these choppy waters.

2016 opened amid fears of a renewed global slowdown, reflected in pronounced financial market volatility. There was a danger that the return of inflation to our objective would be further delayed and – with inflation already very low – deflation risks were material. Just as in 2015, the Governing Council remained determined to use all the tools within its mandate to fulfil its objective.

So in March, we introduced a series of new measures to expand our monetary stimulus, including lowering our key policy rates further, increasing the asset purchase programme from €60 billion to €80 billion a month, purchasing corporate bonds for the first time, and launching new targeted longer-term refinancing operations.

As we describe in the Report, these measures proved very effective in easing financing conditions, sustaining the recovery and – eventually – supporting a gradual adjustment of inflation rates towards levels closer to our objective.

With our policy working, in December the asset purchase programme was extended by nine months to ensure longer support to financing conditions and a sustained return of inflation towards, but below, 2%. The volume of purchases was, however, reset to its original level of €60 billion per month. This reflected the success of our actions earlier in the year: growing confidence in the euro area economy and disappearing deflation risks.

Yet alongside these benefits, monetary policy has side-effects – it always does. In 2016 those side-effects were frequently in the spotlight. In this year's Report we address some of the questions and concerns about the unintended consequences of our actions.

One is about their distributional effects, especially in terms of inequality. We show that, over the medium term, monetary policy has positive distributional effects by reducing unemployment, which benefits poorer households the most. After all, bringing people into a job is one of the most powerful drivers of lower inequality.

Another concern is about the profitability of banks, insurers and pension funds. We discuss how financial institutions have been affected by, and responded to, the low interest rate environment. We show that the ability of banks to adapt depends on their specific business models.

The Report covers other challenges for the financial sector in 2016. We look in particular at the problem of non-performing loans, what needs to be done to tackle it, and the obstacles which remain. We also have a special feature on new technology and innovation in the sector, how it might affect the structure and functioning of the sector, and what this means for overseers and regulators.

And no review of 2016 could be complete without considering the seismic political changes of the year, not least the decision of the United Kingdom to exit the European Union. Accordingly, the Report assesses Brexit from an ECB perspective. Above all, we emphasise the importance of preserving the integrity of the Single Market and the homogeneity of its rules and their enforcement.

Political uncertainty is likely to persist into 2017. But we remain confident that the economic recovery, buoyed by our monetary policy, will continue. The ECB has a clear mandate for its actions: to maintain price stability. This guided us successfully through 2016 – and it will continue to do so in the year to come.

Frankfurt am Main, April 2017

Mario Draghi
President

The euro area economy, the ECB's monetary policy and the European financial sector in 2016

1 The euro area economy

1.1 The global macroeconomic environment

In 2016 the euro area economy faced a demanding external environment. Growth in both advanced and emerging market economies was modest by historical standards and there were episodes of heightened uncertainty and short-lived peaks in financial market volatility, particularly following the UK referendum on EU membership in June and the US presidential election in November. Global inflation was subdued owing to the gradually diminishing impact of past oil price declines and still abundant global spare capacity.

Global economic growth remained modest

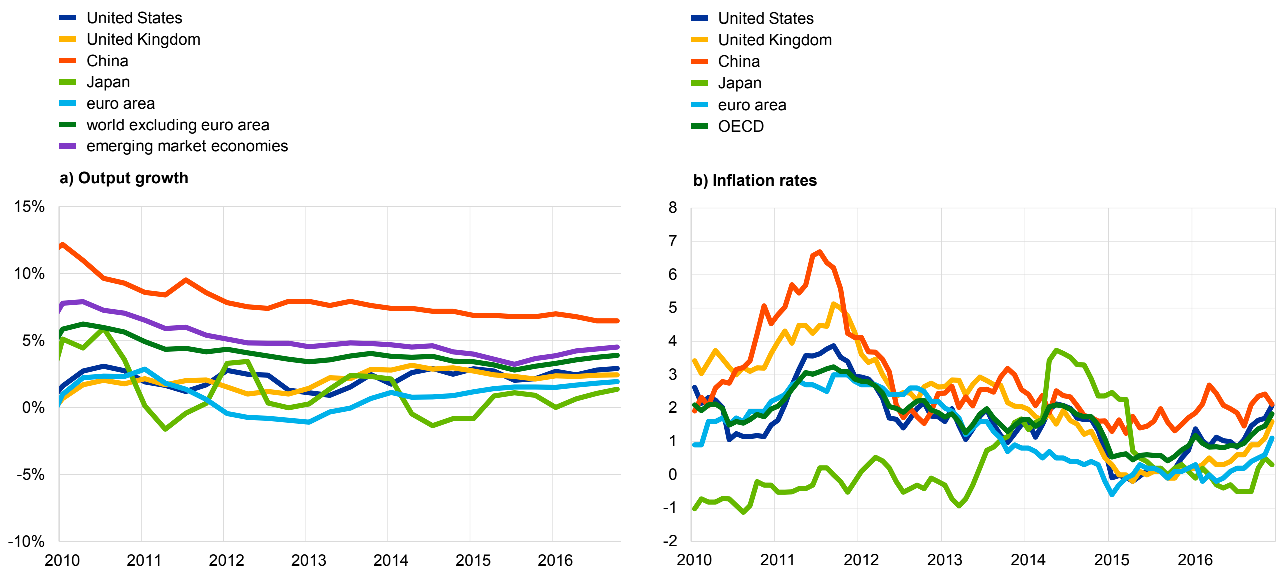
The world economy continued to recover gradually in 2016, although at a slightly lower rate than in the previous year as a result of the deceleration in advanced economies. Economic activity only gathered pace in the second half of the year, particularly in emerging market economies. Overall, global GDP growth remained below its pre-crisis rates (see Chart 1).

2016 was marked by some significant political events, which clouded global economic prospects. In June 2016 the outcome of the UK referendum created uncertainty about the UK's economic outlook, yet the immediate financial and economic impact proved short-lived and modest. Later in the year, the outcome of the US election brought a shift in expectations about the future policies of the incoming US administration, which led to another bout of heightened policy uncertainty.

Chart 1

Main developments in selected economies

(annual percentage changes; quarterly data; monthly data)



Sources: Eurostat and national data.
Notes: GDP figures are seasonally adjusted. HICP for the euro area and for the United Kingdom; CPI for the United States, China and Japan.

Advanced economies continued to grow, albeit at a lower rate than in the year before. Still accommodative financing conditions and improving labour markets supported economic activity. Growth in emerging market economies was also moderate for the year as a whole, with prospects improving significantly in the second half. Two factors were of particular influence: the continuing gradual deceleration of the Chinese economy, and the progressive easing of the deep recessions in major commodity-exporting economies. That said, growth remained restrained because of geopolitical tensions, excessive leverage, vulnerability to capital flow reversals and, in the case of commodity exporters, slow adjustment to lower revenues.

Global trade growth was weak in 2016, with the volume of world imports expanding by only 1.7% annually, following growth of 2.1% in the previous year. There is evidence that certain structural developments that boosted trade in the past – such as falling transportation costs, trade liberalisation, expanding global value chains and financial deepening – will not support trade to the same extent over the medium term. Accordingly, world trade is not very likely to grow faster than global economic activity in the foreseeable future.

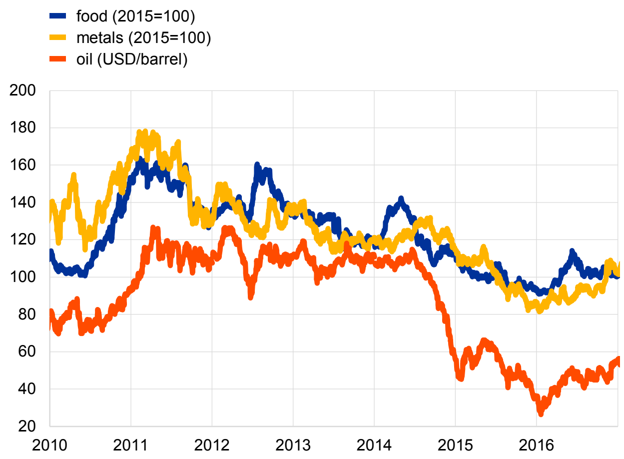
Global financing conditions remained favourable throughout the year. Central banks in major advanced economies maintained an accommodative policy stance, with the Bank of England, the Bank of Japan and the ECB continuing their expansionary monetary policies. The US Federal Reserve System resumed its monetary policy normalisation by raising the federal funds target range by 25 basis points in December 2016. Financial markets showed overall resilience, in spite of spells of heightened uncertainty triggered by political events. Towards the year-end, US long-term bond yields increased markedly. It is still unclear whether this increase reflects higher growth and inflation expectations or rather a spike in term premia on US long-term bonds. Most emerging markets benefited from an improvement in external financing conditions until the US election in November. Thereafter, however, the earlier increase in capital flows towards emerging market economies started to unwind, with government bond spreads rising and pressures on currencies intensifying in a number of countries.

Abundant spare capacity continued to weigh on global inflation

During 2016 global inflation continued to be influenced by low oil prices and still abundant global spare capacity (see Chart 2). Annual headline inflation in the OECD area rose gradually towards the end of the year and reached 1.1% for the year as a whole, compared with 0.6% in 2015. Core annual OECD inflation (excluding food and energy) increased slightly to 1.8% (see Chart 1).

Chart 2
Commodity prices

(daily data)



Sources: Bloomberg and Hamburg Institute of International Economics.

Oil prices recovered from a low of USD 33 per barrel at the end of January 2016 to USD 55 per barrel at the end of December. The curtailment of investment by US oil companies and a sudden increase in the number of global oil supply disruptions during the first half of the year drove prices higher.[1] Towards the end of the year oil prices were significantly affected by OPEC's supply strategy. Following the decision on 30 November to enforce, in the first half of 2017, a cut among OPEC members (by 1.2 million barrels per day), the price of Brent crude oil increased. The upward move was also supported by an agreement between OPEC and some non-OPEC producers on a further cut in production (by 0.6 million barrels per day) on 10 December.

In 2016 non-oil commodity prices recovered; however, quotations showed opposite dynamics in the food and metal sectors. The price of agricultural commodities increased owing to weather-related issues in the first part of the year and retreated over the summer on account of abundant wheat and grain harvests. Metal prices remained at low levels in the first part of the year, as China announced environmental policies restraining the consumption of metals. As the future demand outlook improved in connection with potential new infrastructure investment in China and the United States, metal prices then partially recovered.

Overall, slowly closing output gaps in advanced economies, the modest decline in the ample spare capacity in several emerging market economies and the waning effects of past falls in oil and other commodity prices put slight upward pressure on global inflation in the second half of 2016.

1 For more information, see the US Energy Information Administration's website.

Growth continued across the major economies

In the United States, economic activity slowed in 2016. Following a modest expansion in the first half of the year, real GDP growth rebounded in the second half. Growth was mainly driven by consumer spending, employment gains and strengthened household balance sheets. The drag from an inventory adjustment and declining energy investment that suppressed growth in the first half of the year diminished towards the end of the year, contributing to stronger activity. Overall, GDP growth declined from 2.6% in 2015 to 1.6% in 2016. The underlying labour market momentum remained robust, with a further decrease in the unemployment rate to 4.7% and a pick-up in wage growth at the end of the year. Inflation remained well below the target of the Federal Open Market Committee (FOMC). Overall, annual consumer price index inflation reached 2.1% in 2016, while core consumer price index inflation (excluding food and energy) increased to 2.2%.

Monetary policy remained highly accommodative in 2016. In December, in a move that was widely anticipated by financial markets, the FOMC decided to raise the federal funds target range by 25 basis points to 0.5-0.75%. The fiscal stance was slightly expansionary in the fiscal year 2016, with the fiscal deficit increasing slightly to 3.2% of GDP as a result of increased spending related to healthcare costs and higher net interest payments.

Japan saw solid growth in 2016, helped by accommodative monetary and fiscal policies, easier financial conditions and a tightening labour market. On average, real GDP growth decelerated slightly to 1% in 2016 from 1.2% in the previous year. The unemployment rate declined to 3.1%, but wage growth remained subdued. Annual headline consumer price inflation (CPI) turned negative in 2016, reaching -0.1%, mainly reflecting declining global commodity prices and the stronger yen. The Bank of Japan's preferred measure of core inflation – CPI excluding fresh food and energy – declined somewhat compared with the previous year and stood at 0.6% in 2016. In September the Bank of Japan introduced quantitative and qualitative monetary easing with yield curve control. It also committed itself to expanding the monetary base until the observed rate of inflation exceeded its price stability target and remained above that level in a stable manner.

In the United Kingdom, the economy remained robust despite uncertainty related to the outcome of the referendum on the country's EU membership. In 2016 real GDP increased by 2.0% according to preliminary estimates, mainly supported by robust private consumption.[2] In financial markets, the most notable response to the referendum outcome was a sharp depreciation of the pound sterling. There was a pick-up in inflation from very low levels. Monetary policy remained accommodative during 2016. In August the Bank of England's Monetary Policy Committee cut the main policy rate by 25 basis points to 0.25%, expanded its asset purchase programme and launched a Term Funding Scheme to support the interest rate pass-through to the economy. In November the government announced a new fiscal

2 See also the box entitled "Economic developments in the aftermath of the UK referendum on EU membership", *Economic Bulletin*, Issue 7, ECB, 2016.

mandate and targeted policy measures, particularly in the areas of housing and infrastructure investment, to support the economy during the transition phase.

In China, growth stabilised in 2016, supported by strong consumption and infrastructure spending. Annual GDP growth stood at 6.7% in 2016, after 6.9% in the previous year. Manufacturing investment remained weak, but property investment picked up slightly. Import demand recovered from its low in 2015, but remained weaker than in the past. Relatively subdued foreign demand weighed on exports, which in turn negatively affected imports through processing trade. Annual consumer price inflation increased to 2%, while annual producer price inflation, which has been in negative territory since March 2012, rose to -1.4%.

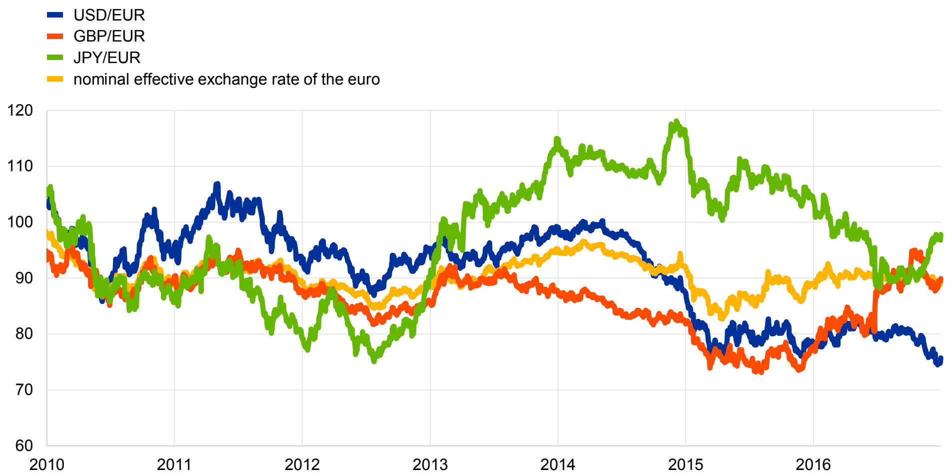
The effective exchange rate of the euro remained broadly stable

In 2016 the exchange rate of the euro was broadly stable in nominal effective terms (see Chart 3). In bilateral terms, however, the euro moved against some of the other major currencies. Against the US dollar, the euro was remarkably stable during most of 2016 as yields on either side of the Atlantic remained largely unchanged, but declined towards the end of the year. A weakening of the euro against the Japanese yen was partially compensated for by an appreciation against the pound sterling.

Chart 3

Euro exchange rate

(daily data)



Source: ECB.
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, while Danmarks Nationalbank increased its policy rate in January 2016 and, in net terms, purchased foreign currency with Danish kroner in 2016. Česká národní banka continued to purchase foreign currency in line with its commitment to intervene in foreign exchange markets in order to keep the exchange rate of the Czech koruna from appreciating beyond a certain level. Likewise, Hrvatska narodna banka continued to conduct interventions in foreign exchange markets under its managed floating exchange rate regime. The Bulgarian lev remained fixed to the euro. The euro also remained broadly stable vis-à-vis the Swiss franc as well as the Hungarian forint and the Romanian leu, while it appreciated against the Swedish krona and, to a lesser extent, the Polish zloty.

1.2 Financial developments

In 2016 the euro area financial markets continued to be driven, to a large extent, by further monetary policy accommodation implemented by the ECB. It contributed to a gradual decrease in euro area government bond yields in the first three quarters of the year. However, as a result of global factors, towards the end of the year euro area government bond yields recovered part of the decline recorded earlier in 2016. Money market rates and the cost of external financing for non-financial corporations continued to decline, reaching historical lows. Non-financial corporations and households experienced further improvements in their financing conditions.

Euro area money market rates declined

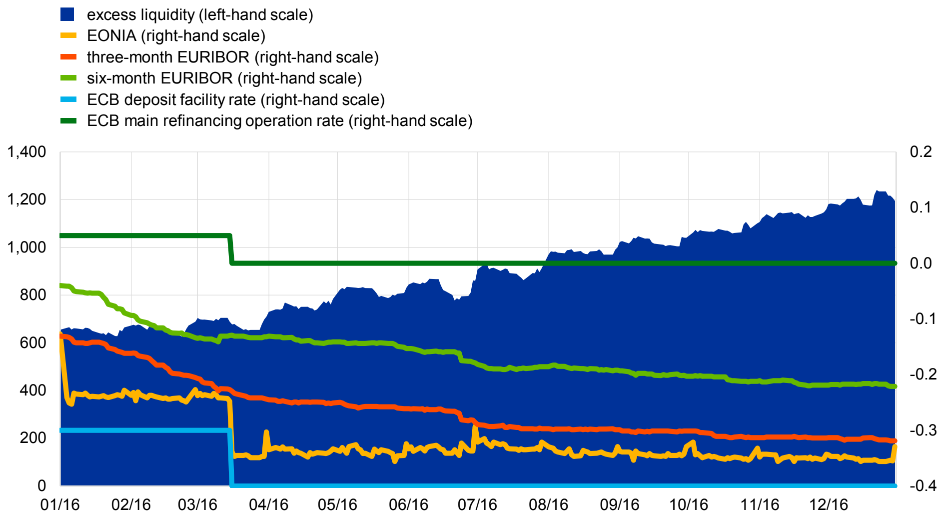
Money market rates continued to decrease in 2016, mainly on account of further monetary policy easing by the ECB.

The easing measures are explained in more detail in Section 2.1. The deposit facility rate cut was swiftly and completely passed through to the EONIA, which subsequently stabilised at around -35 basis points (see Chart 4). In line with its historical pattern, the EONIA increased temporarily at month-ends, but these increases were less pronounced than those in early 2015 before excess liquidity started to rise sharply with the implementation of the asset purchase programme (APP).

Chart 4

Money market rates and excess liquidity

(EUR billions; percentages per annum; daily data)



Sources: ECB and Bloomberg.
Note: The latest observations are for 30 December 2016.

The three and six-month EURIBOR declined further into negative territory. The decrease in EURIBOR rates followed the further easing of monetary policy, with some additional downward pressure stemming from the upward trend in excess liquidity. The increase in excess liquidity by more than €500 billion throughout the year was primarily due to the purchases under the APP and, to a lesser extent, the new series of targeted longer-term refinancing operations (TLTRO-II). Excess liquidity reached €1,200 billion by the end of the year (see Chart 4).

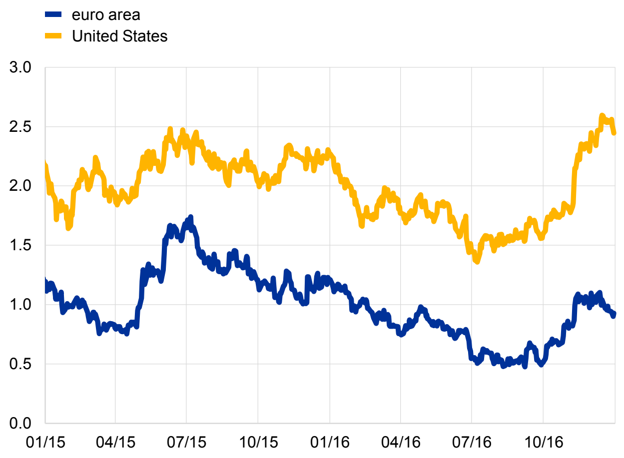
In the secured money market, repurchase agreement (repo) rates also continued to decline, driven by the key ECB interest rate cuts, ample liquidity conditions and a search for high-quality collateral. Repo rates quoted for collateral issued by some euro area countries stood below the level of the deposit facility rate for most of the year, reflecting demand for highly liquid collateral.

Euro money market forward rates bottomed out after the UK referendum on EU membership at the end of June amid higher market expectations of further ECB monetary policy easing. However, by the end of the year, forward rates had reversed as market expectations of additional policy rate cuts declined and the EONIA forward curve steepened. The curve's steepening in tandem with a rise in euro area sovereign bond yields mirrored developments in global longer-term yields, which were most pronounced in the United States.

Euro area government bond yields increased towards the end of the year

Chart 5
Ten-year sovereign bond yields

(percentages per annum; daily data)



Sources: Bloomberg, Thomson Reuters 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 30 December 2016.

Euro area government bond yields were lower overall in 2016 than in 2015, reflecting the continued support from the ECB's purchases of euro area government bonds and other monetary policy measures. Yields in both the euro area and the United States underwent a significant adjustment owing to global developments (see Chart 5). The increased uncertainty regarding global growth prospects at the beginning of the year resulted in a strong decline in risk-free interest rates. The outcome of the UK referendum compressed yields further before a more optimistic global outlook and the outcome of the US presidential election led to an increase in yields in both the euro area and the United States. Overall, the euro area GDP-weighted average of ten-year sovereign bond yields declined by around 30 basis points in 2016 and stood at around 0.9% at the end of the year. Developments in intra-euro area government bond spreads were relatively muted, but showed some heterogeneity across countries.

Euro area equity prices were broadly unchanged after temporary declines

Chart 6
Stock market indices for the euro area and the United States

(index: 1 January 2016 = 100; daily data)

Source: Thomson Reuters.
Notes: The EURO STOXX index is shown for the euro area; the S&P 500 is shown for the United States. The indices are normalised to 100 at 1 January 2016.
The latest observation is for 30 December 2016.

2016 started with a significant decline in global equity markets as developments in China sparked global growth concerns (see Chart 6). As concerns receded, equity markets returned around April to the levels seen at the beginning of the year. A similar pattern was observed in the period around the UK referendum, when a sharp decline in the days after the referendum was reversed in the following months. In the second half of the year the euro area equity market increased markedly on account of an improved outlook. Despite the relatively large movements during the year, the euro area equity market remained broadly unchanged, with the broad EURO STOXX index increasing by around 1%. The small increase in the overall index masked a decline in bank equities, which were negatively affected by banks' stock of non-performing loans and continued low profitability, among other things.

Equities in the United States showed a similar pattern over the course of the year, but performed more strongly overall and recorded an increase of close to

10% in 2016. In December 2016 the major equity indices in the United States reached a new all-time high.

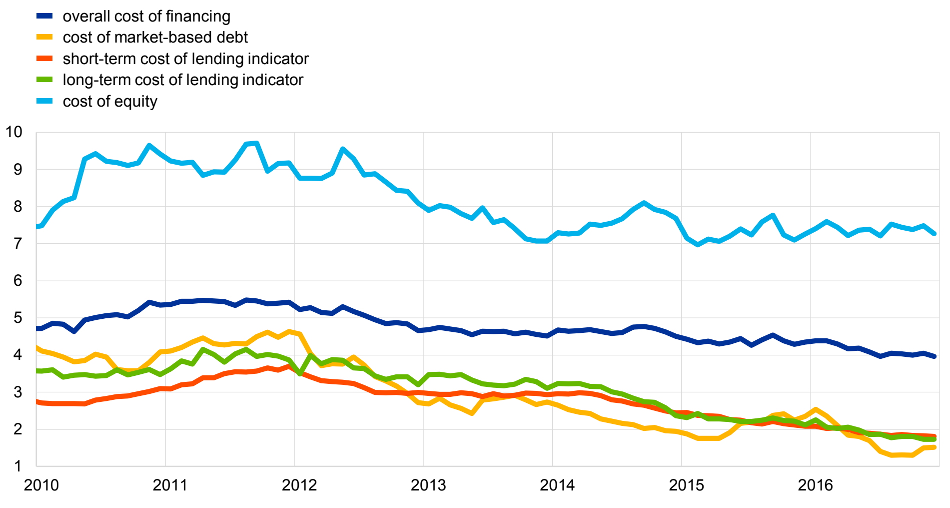
Non-financial corporations benefited from a lower cost of external financing

The monetary policy measures taken in 2016 were also transmitted to the overall nominal cost of external financing for non-financial corporations (NFCs), which reached a historical low in the summer of 2016 (see Chart 7). In particular, negative deposit facility rates and the new TLTRO-II operations announced in March helped to further reduce the cost of bank lending for NFCs. The introduction of purchases of investment-grade euro-denominated bonds issued by non-bank corporations established in the euro area, along with the other elements of the APP, pushed the cost of market-based debt to levels significantly below those recorded in the previous year and also below bank lending rates. However, as the equity risk premium remained elevated, the cost of equity declined only marginally in 2016. The high level of monetary policy accommodation contributed to reducing the cost of external financing, as well as the heterogeneity of external funding costs across euro area countries and across firms of different sizes.

Chart 7

Overall nominal cost of external financing for non-financial corporations in the euro area

(percentages per annum; three-month moving averages)



Sources: ECB, Merrill Lynch, Thomson Reuters and ECB calculations.
Notes: The overall cost of financing for non-financial corporations is calculated as a weighted average of the cost of bank lending, the cost of market-based debt and the cost of equity, based on their respective amounts outstanding derived from the euro area accounts. The cost of equity is measured by a three-stage dividend discount model using information from the Datastream non-financial stock market index. The latest observation is for December 2016.

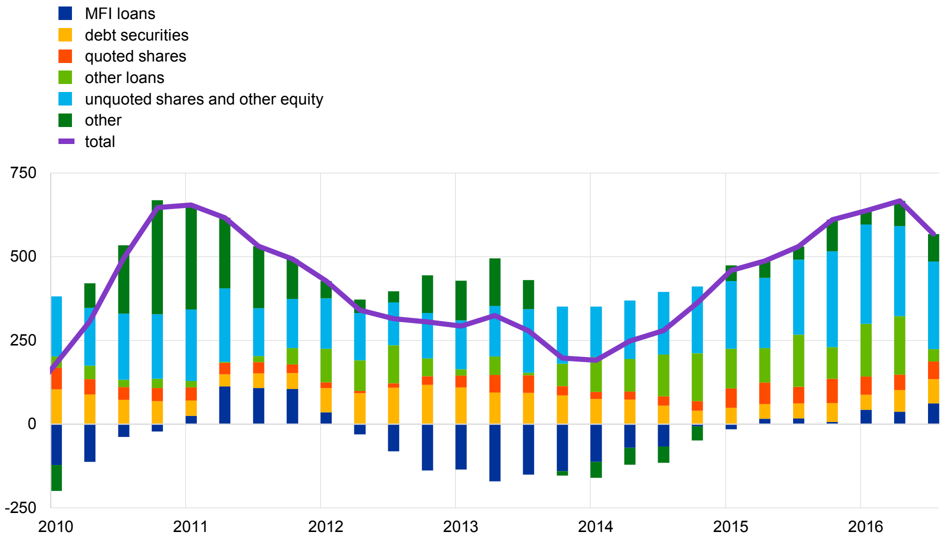
External financing flows stabilised in 2016

In the first three quarters of 2016 NFCs' external financing flows stabilised close to the average level recorded in 2015 (see Chart 8). From a longer-term perspective, the recovery in NFCs' external financing flows from the lows reached in the first quarter of 2014 is still supported by: (i) the further decline in financing costs; (ii) an easing of credit constraints; (iii) a continued expansion of economic activity; and (iv) stronger merger and acquisition activity. Moreover, the ECB's accommodative monetary policy has also contributed to creating favourable conditions for NFCs' access to market-based financing. In particular, the extension in June 2016 of the APP to include corporate bonds supported the issuance of debt securities in the year. Improved credit conditions[3] and lower interest rates led to a slight increase in NFCs' recourse to bank-based financing, while loans from non-MFIs and the rest of the world declined significantly over the year. Unquoted shares and other equity remained the largest component of NFCs' external financing flows, supported by high retained earnings. The issuance of quoted shares was restrained by the relatively high cost of equity. Moreover, the general improvement in access to external financing by NFCs dampened trade credit and inter-company lending dynamics.

Chart 8

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 intermediaries, 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 2016.

3 For more information on the easing of banks' lending conditions, see also Section 1.5 of Chapter 1, which discusses the results of the euro area bank lending survey.

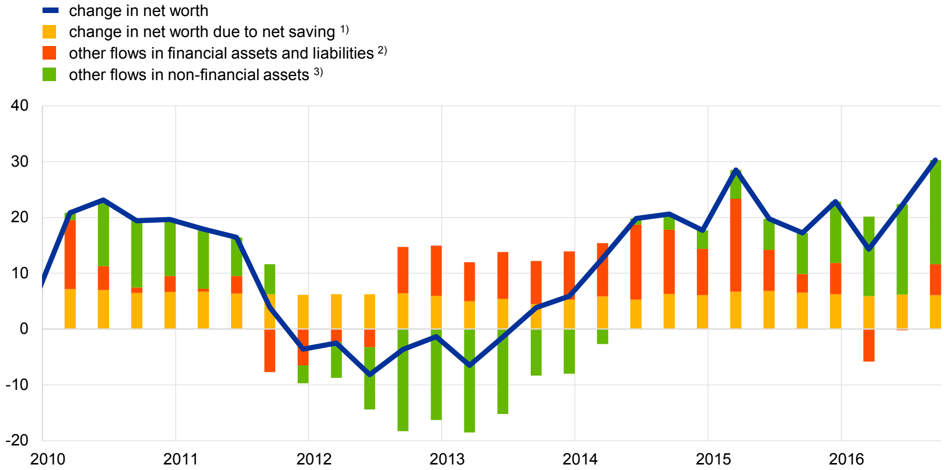
Growth in the net wealth of households accelerated

In the first three quarters of 2016 the net wealth of households continued to grow at an increasing pace (see Chart 9). In particular, continuous house price increases resulted in significant capital gains on households' real estate asset holdings. The increase in share prices in 2016 led to gains on the value of households' financial asset holdings and made a positive contribution to growth in net wealth.

Chart 9

Change in the net wealth of households

(annual flows; percentages of gross disposable income)



Sources: Eurostat and ECB.
Notes: Data on non-financial assets are ECB estimates. The latest observation is for the third quarter of 2016.
1) This item comprises net saving, net capital transfers received and the discrepancy between the non-financial and the financial accounts.
2) Mainly holding gains and losses on shares and other equity.
3) Mainly holding gains and losses on real estate (including land).

The cost of borrowing for euro area households reached a record low, but continued to vary across countries and loan maturities, with the cost of long-term loans declining by more than the cost of short-term loans. Bank borrowing by the household sector continued to recover in 2016.

Box 1
The impact of low interest rates on banks and financial stability

The low interest rates observed throughout 2016 were the result of global and euro area-specific factors. Some of these factors were of a long-term nature and related to structural shifts such as ongoing demographic trends and lower productivity growth, while others were associated with the deleveraging following the financial crisis and the excess of planned savings over planned investment and consumption expenditures. The accommodative monetary policy of the ECB with the primary objective of safeguarding price stability was one factor in this environment. By supporting euro area nominal growth, the ECB's monetary policy aims to attain this objective, which should eventually lead to rising interest rates as the recovery takes hold.

The euro area bank lending survey provides supporting evidence that the ECB's asset purchase programme, targeted longer-term refinancing operations (TLTROs) and negative deposit facility rate contributed to more favourable terms and conditions on lending in 2016, which has led to a pick-up in lending.[4] Alongside these positive elements, the low interest rate environment also exerted pressure on financial institutions.[5] The ECB, together with the European Systemic Risk Board, identified risks to banks, insurance companies and pension funds which relate to the sustainability of their business models and to risk-taking. Some of these risks may need to be contained through specific macro- and microprudential measures.[6]

Low interest rates over a prolonged period of time, especially if accompanied by weak economic growth, may place strains on the profitability and solvency of those institutions that offer guaranteed returns over the long term. Beyond the banking system, the low interest rates could render traditional guaranteed-return products of insurers and pension funds unviable. Evidence shows that the insurance and pension sectors are already moving from guaranteed-return to unit-linked business models in order to reduce long-term guaranteed liabilities. As a result, the financial sector is reducing the provision of longer-term return guarantees. Moreover, the low interest rate environment can also contribute to a fall in the net interest income of banks, especially through a compression of net interest margins as deposit rates may be constrained by an effective lower bound, and reduce profitability. While net interest income is the dominant source of income for most banks, other factors, such as fee and commission income or the relative cost-efficiency across banks, also shape the profitability of banks.

In an effort to restore profit margins, financial institutions have tapped alternative sources of income and are gradually adjusting their business models. Fee and commission income as a share of total income is lower for banks that specialise in lending and higher for banks offering custodian services.[7] In particular, recent evidence suggests that some banks have stepped up their fee and commission-generating activities. An important income source for lenders in recent years has been fees from mortgage prepayments and renegotiations. Borrowers have taken advantage of the gradually declining long-term interest rates, especially in those countries where fixed rate mortgages prevail. The income from prepayment and renegotiation fees is likely to play a smaller role in the future as such fees are only incurred once at the moment of renegotiation. Banks thus need to further adjust their business models and cost-efficiency to remain profitable. Indeed, banks have also considered cost-cutting measures such as restructuring, headcount reductions, branch closures and the digitalisation of processes, but the progress in improving cost-efficiency remains uneven across countries and institutions.[8]

The declining interest income in the low interest rate environment and limited progress in improving profitability increase the potential for broad-based risk-taking by financial institutions, especially by those institutions for which net interest income has accounted for a predominant share of income in the past. Investments in riskier asset classes or assets with longer maturities can bear the risk of a larger exposure to illiquid financial instruments, which exposes financial institutions to increased revaluation risks and raises the risk of contagion.

4 See The euro area bank lending survey, ECB, October 2016.

5 The non-standard monetary policy measures are found to have exerted only a limited impact on bank profitability; see Financial Stability Review, ECB, November 2016, Box 4.

6 See Macroprudential policy issues arising from low interest rates and structural changes in the EU financial system, European Systemic Risk Board, November 2016.

7 See Kok, C., Mirza, H., Móré, C. and Pancaro, C., “Adapting bank business models: financial stability implications of greater reliance on fee and commission income”, Financial Stability Review, ECB, November 2016, Special Feature C.

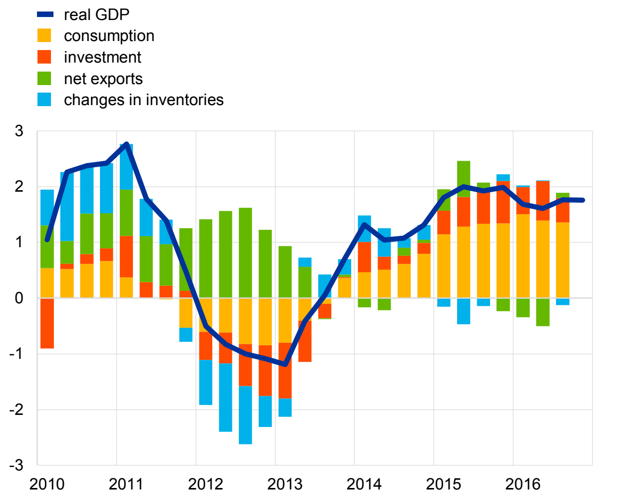
8 See Financial Stability Review, ECB, November 2016, Section 3.

The ECB is closely monitoring the business model adjustments by financial institutions in its role of bank supervisor and macroprudential authority given the mandate to ensure financial stability in countries covered by European banking supervision. In this context, the ECB can take supervisory action and implement macroprudential policies for the banking sector to ensure financial stability, which remains a precondition for placing the economic recovery on stable ground by containing systemic risks.

1.3 A broad-based recovery

Chart 10
Euro area real GDP

(year-on-year percentage changes; year-on-year percentage point contributions)



Sources: Eurostat and ECB calculations.
Note: Annual GDP growth for the fourth quarter of 2016 refers to the preliminary flash estimate.

The domestic demand-led economic recovery in the euro area that started at the beginning of 2013 continued in 2016. Looking at the factors driving economic activity, the current growth momentum appears to be becoming more resilient (see Box 2 for more details). At the same time, euro area economic activity has been held back by the still subdued growth in foreign demand amid heightened global uncertainty. As a result, average annual growth stood at 1.7% in 2016 (see Chart 10). This is only slightly lower than the 2.0% recorded in 2015, which was boosted by particularly strong GDP growth in Ireland. Private consumption increased at a rate similar to that in 2015, again fuelled by rising disposable income, while investment rose at a slightly slower pace than in the previous year, notwithstanding the recovery in the construction sector. At the same time, government consumption rose at a stronger rate in 2016, thus contributing positively to economic growth (see Section 1.6 of Chapter 1). The economic recovery was relatively broad-based across euro area countries.

The euro area economy continued to expand

The very accommodative monetary policy stance of the ECB continued to be transmitted to the real economy and supported domestic demand. Improvements in corporate profitability and very favourable financing conditions further promoted a recovery in investment. Moreover, sustained employment gains, which also benefited from past structural reforms, continued to support the recovery. The still relatively low level of oil prices provided further impetus to growth in 2016. Meanwhile, public and private sector indebtedness, which remained at high levels in some countries, and the associated deleveraging needs dampened domestic demand. Moreover, slow progress in implementing structural reforms continued to be a drag on growth.

Euro area private consumption strengthened further in 2016, with an average annual growth rate of around 2.0%, which was broadly similar to that in the previous year. The main factors driving the increase in private consumption were the low oil price, particularly at the beginning of the year, and improvements in euro area labour markets and the resulting increase in labour income. In this respect, it was mainly the growth in the number of jobs, rather than higher wages, which contributed to total nominal labour income growth in 2016. Low interest rates continued to support private consumption as borrowing became cheaper and saving less rewarding. In addition, although the net interest income of euro area households decreased marginally in 2016, lower interest rates mainly redistributed resources from net savers to net borrowers, who typically have a higher propensity to consume than net savers.[9]

The monetary policy measures implemented by the ECB over recent years, including the corporate sector purchase programme announced in March 2016, have spurred demand and hence promoted investment. As a result, investment continued to contribute substantially to growth in 2016, also reflecting improvements in firms' profits, less constrained demand and increasing capacity utilisation. Moreover, the monetary policy measures have boosted business confidence, reduced firms' net interest payments and eased financial conditions, including those for small and medium-sized enterprises, thereby further strengthening business investment. Investment in transport equipment contributed to the recovery in business investment in particular. Nevertheless, some factors may have weighed on firms' investment activities, such as the prolonged decline in euro area long-term growth expectations, ongoing corporate balance sheet adjustments related to firms' high indebtedness and weaker global trade.

Construction investment also improved, albeit from low levels, alongside the recovery in euro area housing markets. The latter reflected higher demand, which was in turn supported by real income growth, and favourable mortgage rates and lending conditions on the back of monetary policy measures, as well as fiscal incentives in some countries. Furthermore, returns on alternative forms of household investment remained low, providing further incentives for residential investment. The recovery of the housing market was widespread across euro area countries.

Economic growth dynamics continued to be dampened by the weak external environment in 2016, which more than offset the impact of the lagged effects from the sizeable depreciation of the euro in 2014-15 (see Section 1.1 of Chapter 1). Euro area exports to the United States, Asia (excluding China) and emerging market economies remained subdued in 2016. At the same time, trading partners in Europe and China withstood these headwinds and increasingly contributed to euro area exports. Trade within the euro area strengthened in 2016 and mirrored the underlying momentum in domestic demand.

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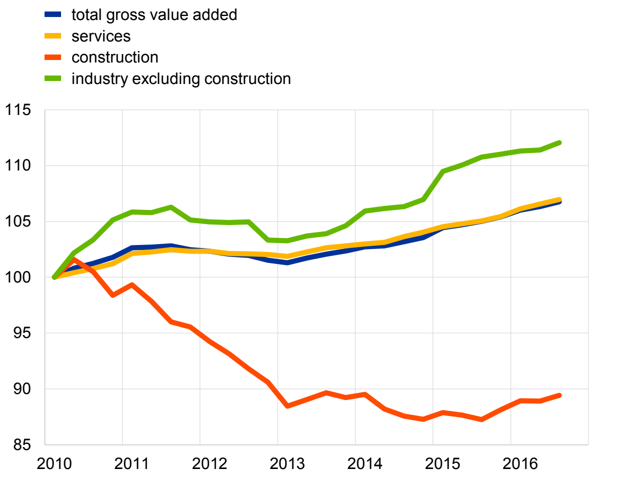
9 See Jappelli, T. and Pistaferri, L., "Fiscal policy and MPC heterogeneity", *American Economic Journal: Macroeconomics*, Vol. 6, No 4, 2014, pp. 107-136.

Chart 11

Euro area real gross value added by economic activity

(index: Q1 2010 = 100)

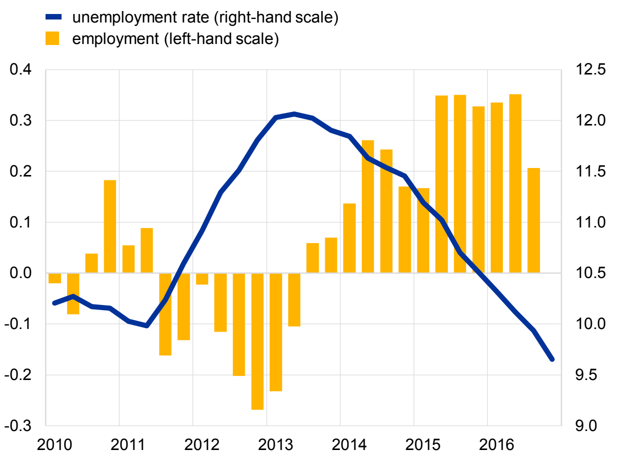


Sources: Eurostat and ECB calculations.

Chart 12

Labour market indicators

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



Source: Eurostat.

From a sectoral perspective, the rise in output in 2016 was broad-based (see Chart 11). Total gross value added, which in the second quarter of 2015 surpassed its pre-crisis peak in the first quarter of 2008, rose by around 1.7% on average in 2016. Value added growth in industry (excluding construction) slowed down to around 1.6% in 2016, while the services sector expanded by 1.8%, which was somewhat higher than in 2015. At the same time, value added in construction, albeit still far below its pre-crisis level, gained momentum, rising by around 2.0% – the highest growth rate recorded since 2006. This confirms that developments in the construction sector are becoming increasingly positive following the protracted period of contraction or slow growth that started in 2008.

Euro area employment continued to rise

Labour markets recovered further in 2016 (see Chart 12). By the third quarter of 2016 the number of persons employed in the euro area stood 1.2% above the level at the same time in 2015, or more than 3% above the last trough in the second quarter of 2013. However, employment stood around 0.5% below its pre-crisis peak in the first quarter of 2008. Looking at the sectoral breakdown, employment increased mainly in the services sector and, to a lesser extent, in industry excluding construction, while employment in construction remained broadly stable.

In the first three quarters of 2016 total hours worked rose at a similar pace to headcount employment. Annual productivity growth per person employed remained low, averaging around 0.4% per quarter over the first three quarters of 2016, compared with an annual rise of 1.0% in 2015 (which was, however, boosted by the GDP revision in Ireland).

The unemployment rate continued to decline in 2016 and stood at 9.6% in December, which was the lowest rate since mid-2009. The decline in unemployment, which started in the second half of 2013, has been broad-based across gender and age groups. For 2016 as a whole, the unemployment rate averaged 10.0%, compared with 10.9% in 2015 and 11.6% in 2014. However, broader measures of labour market slack remained elevated.

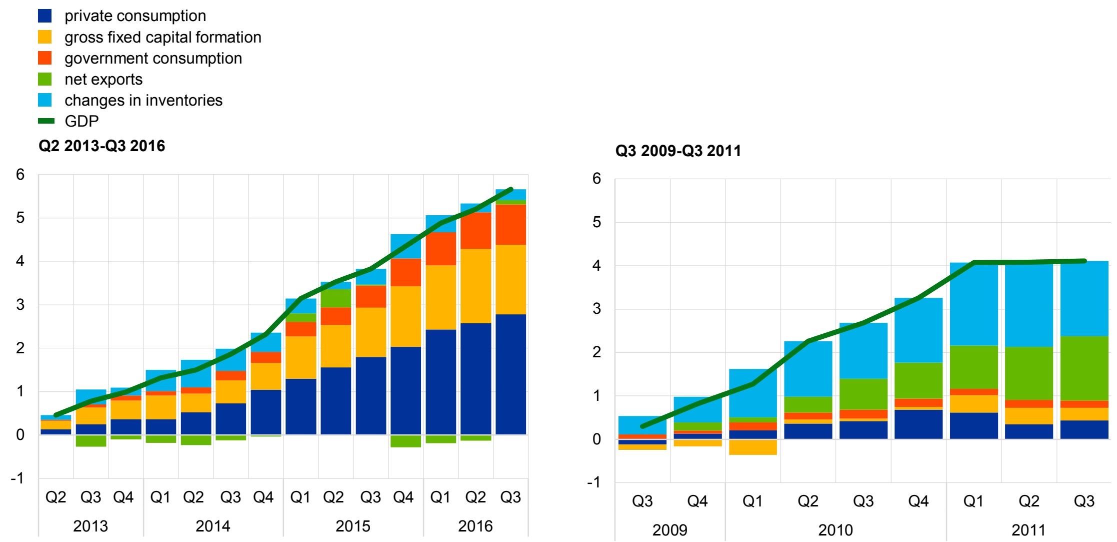
Box 2
Factors sustaining the ongoing recovery

Euro area economic growth continued in 2016, despite elevated global uncertainty. The recovery in GDP since the second quarter of 2013 has been driven to a large extent by growth in private consumption. Strong gains in employment facilitated a steady rise in real disposable income that supported both robust consumption dynamics and ongoing household deleveraging. These factors imply some resilience in the growth momentum. Furthermore, the broadening of the drivers of euro area economic growth, spurred by the ECB's very accommodative monetary policy stance, also points towards the sustainability of the recovery.

Almost half of the cumulative euro area GDP growth since the second quarter of 2013 is explained by the contribution of consumption (see Chart A, left panel)[10]. To some extent, this may be seen as normal, as consumption is the biggest expenditure component (around 55% of GDP in the euro area). Nevertheless, this stands in stark contrast to the 2009-11 recovery, where only 11% of cumulative GDP growth was explained by consumption (see Chart A, right panel). The current recovery has been much less reliant on net exports than the previous upturn, but it has also proven to be more gradual and persistent.

Chart A
Contributions to GDP

(cumulated percentage points)



Sources: Eurostat and ECB calculations.

A key factor behind the sustainability of the ongoing recovery relates to the composition of gross disposable income growth, which in the current cyclical upturn differs significantly from that in the period from the third quarter of 2009 to the third quarter of 2011 (see Chart B). During the current recovery, disposable income growth has been supported by relatively strong employment creation.

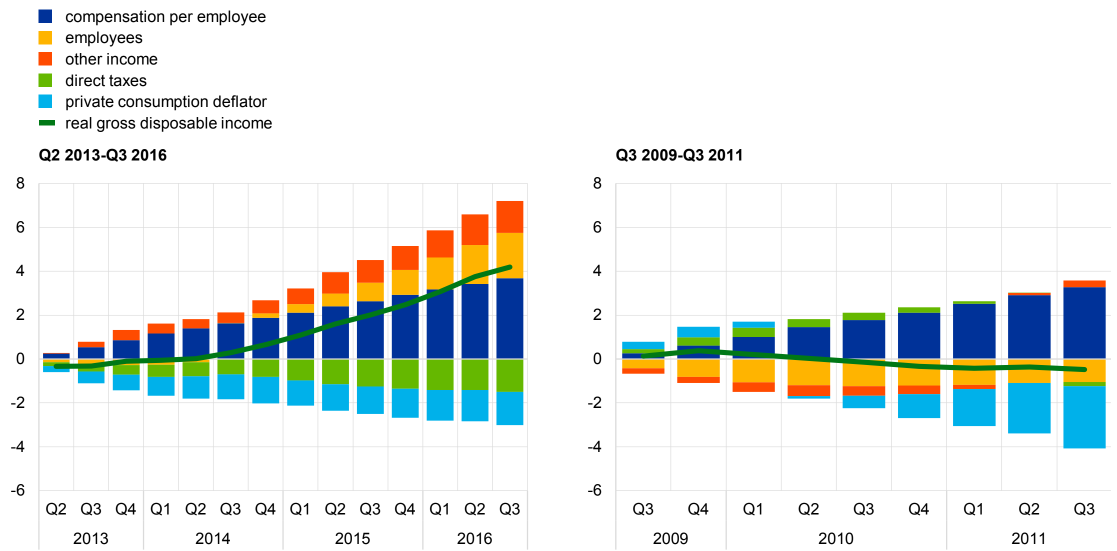
10 The conclusion that the current recovery is mainly consumption-driven does not depend on the way in which the role of consumption in the recovery is determined. One measure for determining the latter uses the contribution of consumption to total GDP growth; another measure compares the growth rate of consumption with that of GDP. This box utilises the first measure so that the stronger cyclicality of investment (i.e. higher growth in a recovery) does not blur the analysis.

By contrast, in the previous recovery, disposable income growth was driven almost entirely by wage growth, while employment actually declined. Furthermore, while part of the nominal income growth has been eroded by inflation, this has happened to a much lesser extent than in the previous recovery, as the oil price declines since the second half of 2014 have provided households with a windfall gain in terms of their real purchasing power.

Chart B

Contributions to real disposable income

(cumulated percentage points)



Sources: Eurostat and ECB calculations.

Economic theory suggests that household consumption should react more strongly to employment growth than to real wage increases, particularly as the former is more persistent than the latter.[11] An employment increase today may therefore signal a larger increase in permanent income than a similar increase in wages. This helps to explain why consumers react more strongly to fluctuations in current employment growth than to fluctuations in current wage growth.[12] Moreover, microeconomic evidence suggests that unemployed or inactive people have a higher propensity to consume than those who are employed.[13] As increases in aggregate labour income due to fluctuations in employment are, to a large extent, concentrated among the inactive or unemployed, this also helps to explain why, in aggregate, the contemporaneous response of consumption to employment fluctuations is greater than that to fluctuations in wage growth. The stronger contribution of employment to real disposable income in the current recovery is therefore consistent with stronger consumption growth.

[11] While quarterly employment growth is strongly positively autocorrelated (i.e. persistent), the autocorrelation of quarterly wage growth is very weak. Annual employment growth is also somewhat more persistent than annual wage growth.

[12] Campbell, J. and Deaton, A., “Why is consumption so smooth?”, *Review of Economic Studies*, Vol. 56, pp. 357-373, 1989.

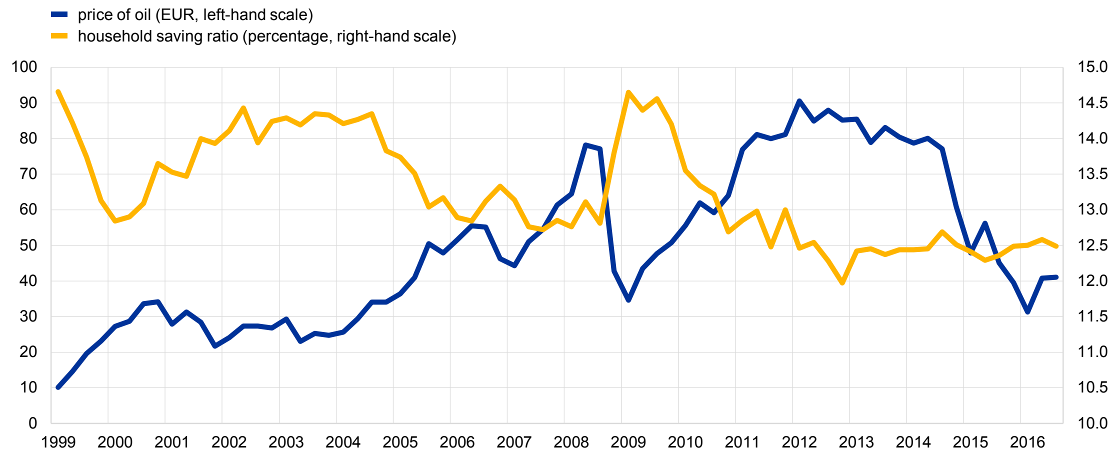
[13] For more evidence, see for instance Japelli, T. and Pistaferri, L., “Fiscal policy and MPC heterogeneity”, *American Economic Journal: Macroeconomics*, Vol. 6, No 4, 2014, pp. 107-136; Casado, J.M. and Cuenca, J.A., “La recuperación del consumo en la UEM”, *Boletín Económico*, Banco de España, November 2015; and *Annual Report 2015*, Banco de España.

Lower energy prices have also contributed to the robust consumption growth in the ongoing recovery. The overall decline in oil prices since the second half of 2014 has provided households with a windfall gain in terms of their real purchasing power that has contributed to both steady consumption growth and a moderate increase in the household saving ratio. Nevertheless, the support from lower oil prices for consumption growth is starting to fade, since most of the windfall gain is now being spent. Typically, from a historical perspective, consumption reacts with a lag to changes in oil prices. However, consumption has recently reacted more quickly to the oil price decline than in previous episodes of falling oil prices, as evidenced by the relatively muted response of the household saving ratio to the windfall gain (see Chart C).

Chart C

Saving ratio and oil prices

(euro and percentages)

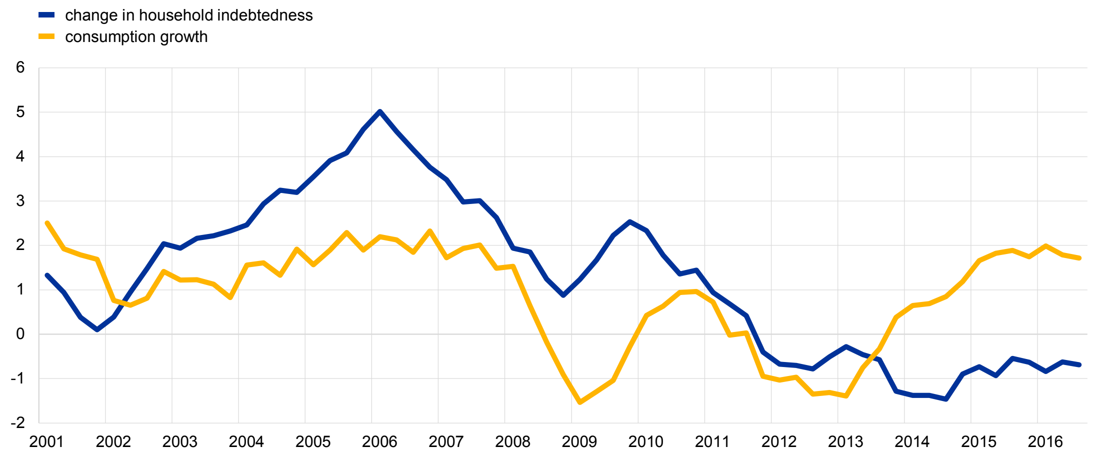


Sources: Bloomberg Finance L.P., Eurostat and ECB calculations.

Chart D

Household indebtedness and consumption

(percentage points and percentages; year-on-year changes based on quarterly data)



Sources: Eurostat and ECB calculations.
Note: Household indebtedness is defined as the ratio of loans to households to household gross nominal disposable income.

Another factor contributing to the sustainability of the ongoing recovery relates to the fact that the current consumption-driven growth is not spurred by an increase in household indebtedness (defined as the ratio of loans to households to household gross nominal disposable income). In contrast to the period before the crisis, euro area consumption growth has been coupled with a gradual decrease in household indebtedness (see Chart D). This underscores the sustainability and resilience of the consumption-driven economic recovery.

As well as being largely consumption-driven in nature, the economic recovery is becoming increasingly broad-based as the support from domestic investment, spurred by the ECB's very accommodative monetary policy stance, gradually strengthens. The dynamics of gross fixed capital formation contributed close to one-third of the cumulative GDP growth in the period from the second quarter of 2013 to the third quarter of 2016.

At the same time, export growth moderated in 2016 as foreign demand remained subdued amid heightened global uncertainty, while the positive effects of the past depreciation of the euro petered out. The overall support for economic activity from the relatively low oil prices and the depreciation of the euro in the period 2014-15 waned in 2016 in the context of a broadly stable effective exchange rate of the euro. Nevertheless, given indications of a somewhat stronger global recovery, extra-euro area exports are expected to gather momentum in line with the strengthening of foreign demand and thus to contribute to the robustness of the economic expansion.

Overall, the sustainability of the current recovery is underpinned by household income growth supported by rising employment, the ongoing deleveraging of the household sector and the broadening of the drivers of economic growth.

1.4 Price and cost developments

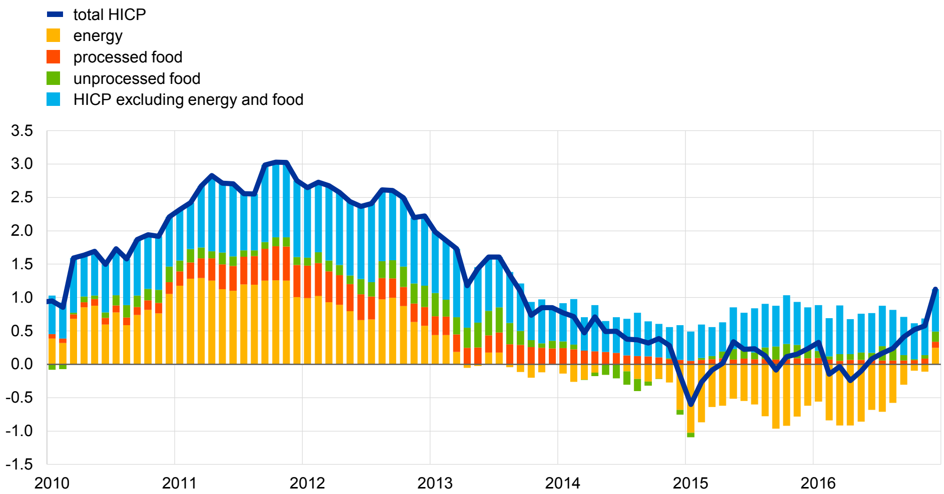
In 2016 the pattern of headline inflation in the euro area, as measured by the Harmonised Index of Consumer Prices (HICP), mainly reflected the influence of energy prices. This influence accounted for the low or even negative rates in the early months of 2016, but also for the subsequent upward trend as the negative contributions of energy waned. Underlying inflation, as measured by HICP inflation excluding energy and food, did not show any sign of an upward trend, hovering between 0.7% and 1.0% during the year.

Headline inflation was driven largely by energy prices

In 2016 headline HICP inflation in the euro area was 0.2% on average, up from 0.0% in 2015. The profile of HICP inflation was mostly determined by energy price developments (see Chart 13). Headline inflation was negative in spring, but thereafter increased gradually. By December it had increased by more than 1 1/4 percentage points compared with the low in April.

Chart 13
HICP inflation and contributions by components

(annual percentage changes and percentage point contributions)

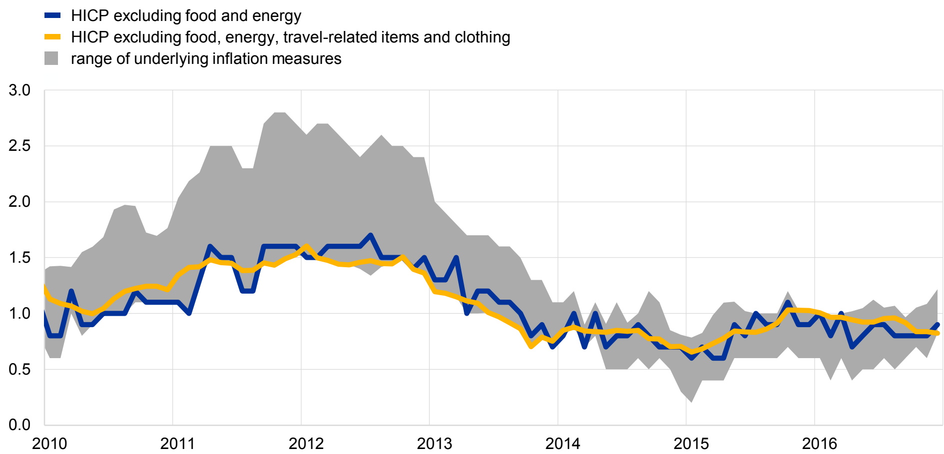


Sources: Eurostat and ECB calculations.

By contrast, various alternative measures of underlying inflation did not show any clear signs of an upward trend (see Chart 14). HICP inflation excluding energy and food hovered between 0.7% and 1% throughout 2016. The lack of any upward momentum in underlying inflation was partly due to the indirect downward effects of past sharp declines in oil prices and other commodity prices, which materialise with a lag. More fundamentally, domestic cost pressures – in particular those stemming from wage growth – also remained subdued (for more details, see Box 3).

Chart 14
Measures of underlying inflation

(annual percentage changes)



Sources: Eurostat and ECB calculations.
Notes: In the range of underlying measures, the following have been considered: HICP excluding energy; HICP excluding unprocessed food and energy; HICP excluding food and energy; HICP excluding food, energy, travel-related items and clothing; trimmed mean (10%); trimmed mean (30%); the median of the HICP; and a measure based on a dynamic factor model. The latest observations are for November 2016.

Looking at the main components of the HICP in more detail, energy inflation made a negative contribution to headline inflation of -0.5 percentage point on average in 2016. This was mainly due to developments in oil prices in euro terms, which primarily affect consumer liquid fuel prices. They also feed through to consumer gas prices, but the pass-through is less direct and weaker and has a longer lag.[14]

Food price inflation fell back to 1.0% on average in 2016, after trending upwards in 2015 to 1.4% in the fourth quarter of 2015. This decline as well as fluctuations in the course of the year were mainly attributable to developments in unprocessed food prices, in particular fruit and vegetable prices, reflecting mainly transitional effects such as sharp weather-related increases in July and August and the subsequent strong downward correction in September and October. Processed food inflation, by contrast, remained broadly stable throughout the year.

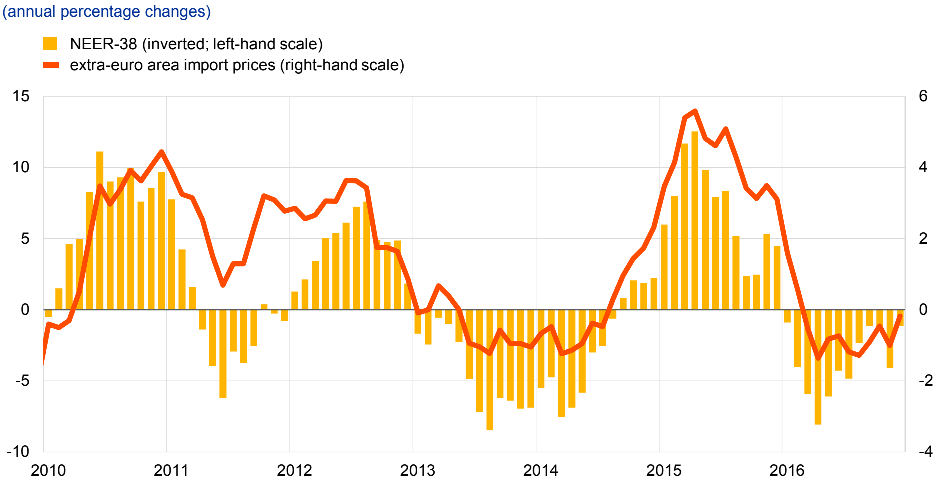
The annual rate of change in non-energy industrial goods prices increased to 0.7% in January and February, but then decreased and stood at 0.3% from August to December. This decrease was driven by the prices of durables and semi-durables, the two components of non-energy industrial goods with the highest import content, which are thus more likely to be affected by the appreciation of the nominal effective exchange rate of the euro that started in spring 2015. Non-durable goods inflation remained broadly stable.

In this respect, pipeline pressures remained weak in 2016. The annual rate of change in import prices declined markedly in 2015 and has been negative since early 2016, mainly reflecting the direct impact of the appreciation of the nominal effective exchange rate of the euro (see Chart 15). On the domestic side, producer price inflation in the non-food consumer goods industries hovered at levels around zero throughout the year. Developments in producer prices in the intermediate goods industries point to a notable impact of crude oil and other commodity prices at the earlier stages of the price chain and a subsequent influence also on the later stages (as measured in consumer goods prices).

14 See the box entitled "Oil prices and euro area consumer energy prices", *Economic Bulletin*, Issue 2, ECB, 2016.

Chart 15

Import prices for non-food consumer goods and exchange rate developments



Sources: Eurostat and ECB calculations.
Notes: The latest observations are for November 2016 for the NEER-38 and October 2016 for import prices. NEER-38 is the nominal effective exchange rate of the euro against the currencies of 38 of the euro area's most important trading partners.

Services price inflation hovered around 1.1% throughout 2016, substantially below its longer-term average. Items in the services component of the HICP tend to be produced domestically, which means that services prices should be more closely linked to developments in domestic demand and labour costs. The subdued developments are thus likely to reflect the still sizeable slack in the euro area product and labour markets.

Domestic cost pressures remained subdued

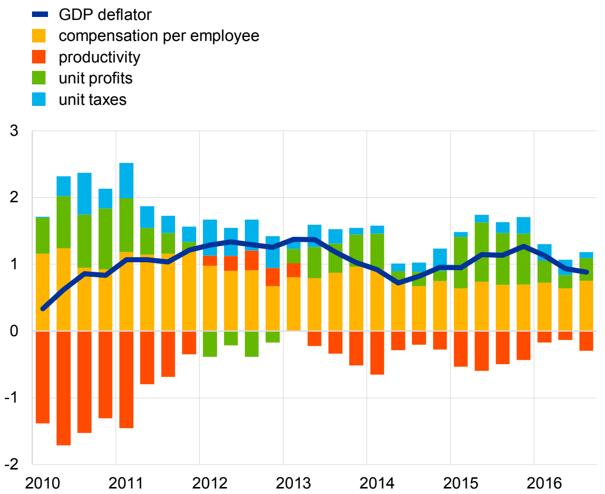
Domestic cost pressures stemming from labour costs remained subdued in the first three quarters of 2016.

Growth in compensation per employee and unit labour costs in the euro area stood on average at 1.3% and 0.9% respectively in the first three quarters of 2016 (see Chart 16). The slight recovery in unit labour costs in 2016 compared with 2015 mainly reflected a reduction in labour productivity growth, while growth in compensation per employee remained low. Factors explaining the subdued wage pressures include the still large amount of labour market slack, structural reforms in labour markets in recent years that have resulted in higher downward wage flexibility in some euro area countries and low inflation.[15]

[15] See the box entitled "Recent wage trends in the euro area", *Economic Bulletin*, Issue 3, ECB, 2016.

Chart 16
Breakdown of the GDP deflator

(annual percentage changes and percentage point contributions)



Sources: Eurostat and ECB calculations.

Domestic cost pressures stemming from profit developments (measured in terms of the gross operating surplus) decreased somewhat in 2016 compared with 2015. This could indicate that the upward effects on profits of terms-of-trade improvements related to weak oil prices, which had been the dominant factor pushing up profits in 2015, were fading as oil prices continued to recover from the lows reached in early 2016.[16] As a result, profits per unit of output were the main driver of the slight decrease in the annual rate of change in the GDP deflator from the fourth quarter of 2015 to the third quarter of 2016.

Long-term inflation expectations stabilised

Survey-based long-term inflation expectations stabilised in 2016. The Survey of Professional Forecasters showed five-year-ahead inflation expectations at 1.8% in all four rounds in 2016. The level of longer-term inflation expectations in the October 2016 Consensus Economics survey was slightly higher at 1.9%. After reaching historical lows in July, the inflation expectations implied by five-year inflation-linked swap rates five years ahead recovered. However, market-based long-term inflation expectations remained lower than survey-based expectations throughout the year.

Box 3
Trends in underlying inflation: the role of wage dynamics

Underlying inflation continued to lack a convincing upward trend in 2016. This box reviews some of the factors that are likely to have held down dynamics and in particular the role of wages in explaining the subdued inflation trends.

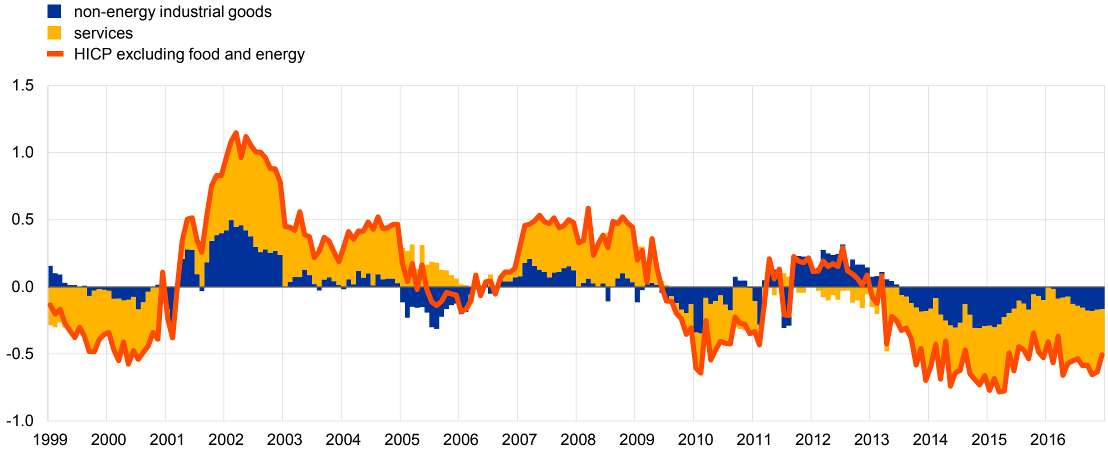
In 2016 HICP inflation excluding food and energy continued to hover between 0.7% and 1.0%, well below its historical average (see Chart A). This reflected in particular the continued subdued services price inflation, but was also reinforced by the renewed downward movement of non-energy industrial goods price inflation after some recovery from 2015 to early 2016. Part of these subdued developments can be explained by the downward indirect effects that the low oil and other commodity prices had on input prices for the production of specific services (e.g. transportation) and consumer goods (e.g. pharmaceutical products). Moreover, the globally subdued price dynamics held down the prices of directly imported consumer goods.

[16] See the box entitled "What accounts for the recent decoupling between the euro area GDP deflator and the HICP excluding energy and food?", *Economic Bulletin*, Issue 6, ECB, 2016.

Chart A

Deviation of the HICP excluding food and energy from its long-term mean and contributions of main components

(annual percentage changes and percentage point contributions)



Sources: Eurostat and ECB calculations.
Notes: The red line indicates the deviation of the annual growth rate of the Harmonised Index of Consumer Prices excluding food and energy from its long-term mean since 1999 of 1.4%. The contributions are shown as deviations from their long-term mean.

However, the main sources of subdued underlying inflation relate to moderate domestic price and cost developments. Wages account for a large share of input costs, in particular in the typically more labour-intensive services sector. However, a change in nominal wage growth does not necessarily put pressure on firms to change prices, for example if the change was induced by a change in labour productivity. Hence, in assessing cost pressures, it is often useful to analyse changes in unit labour costs, which are calculated as the difference between nominal wage growth and the rate of change in labour productivity. Moreover, firms may choose to adjust their profit margins instead of their prices in response to a change in unit labour costs. Abstracting from short-term movements due to productivity changes, unit labour cost dynamics seem to have developed in line with wage dynamics in the recent past.[17]

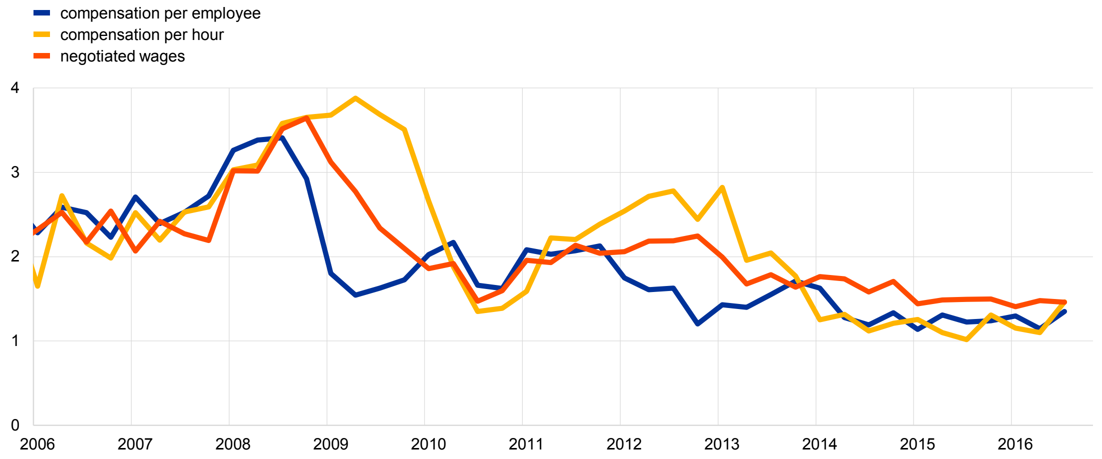
Wage growth remained subdued in 2016 across the different indicators. In particular, negotiated wage growth hovered around historically low annual rates, while growth in compensation per employee or per hour worked was even lower (see Chart B). The difference between negotiated and actual wage growth implies a negative wage drift, which can be seen as an indicator of downward pressure on wages. At the sectoral level, wage growth has been declining substantially in both the market services sector and industry excluding construction. So what has been keeping wage growth so low?

[17] The annual rate of change in unit labour costs increased in the first three quarters of 2016 compared with 2015, which mainly reflected a deceleration in labour productivity growth. This notwithstanding, annual growth in unit labour costs remained well below the historical average. However, in the current low inflation environment, the increase in unit labour costs has been buffered by an adjustment in profit margins.

Chart B

Wage growth in the euro area

(annual percentage changes)



Sources: Eurostat and ECB calculations.

A natural way to assess wage growth is to look at it through the lens of a standard Phillips curve model. In such a model, wages are determined by inflation expectations (here backward-looking expectations[18]), productivity and the unemployment rate (see Chart C). Breaking down wage growth into these factors suggests that the below-average wage growth in 2016 was mainly accounted for by the below-average contribution from past inflation and high unemployment. The need to cut unemployment as well as labour market reforms in several countries resulted in more employment-oriented and less pay-oriented wage bargaining. There is also evidence that downward wage rigidities have declined overall in the euro area, especially in countries which experienced a strong negative macroeconomic shock.[19] Low inflation readings in the past few years may have affected wage growth in different ways. Indeed, there may have been less pressure in wage bargaining as the low oil prices increased the purchasing power of employees' wages. Productivity growth has also recently made a negative contribution to wage growth relative to long-term patterns.

Looking ahead, the drag from all of the factors discussed above on wage growth is expected to dissipate gradually. First, labour market slack is expected to decline further as the economic recovery continues and as labour market reforms help to create employment. Second, the impact of past oil price declines appears to have come to an end, leading to a further pick-up in inflation and less of a restraining impact on wage agreements. Overall, the expected higher wage pressures should then also pass through to underlying inflation.

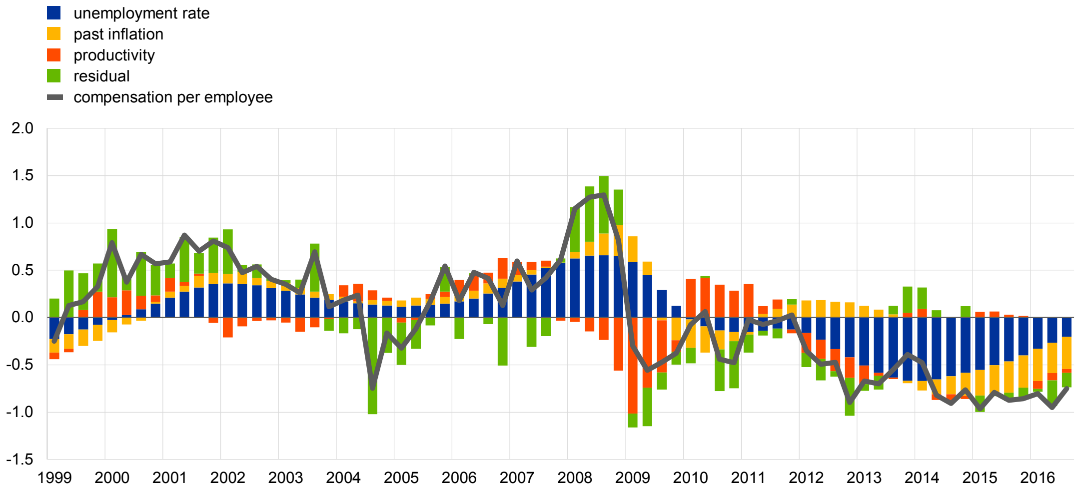
[18] Including inflation expectations stripped out of the backward-looking component adds little explanatory power.

[19] See the article entitled "New evidence on wage adjustment in Europe during the period 2010-13", *Economic Bulletin*, Issue 5, ECB, 2016, and Anderton, R. and Bonthuis, B., "Downward Wage Rigidities in the Euro Area", *Research Paper Series*, No 2015/09, Nottingham University Centre for Research on Globalisation and Economic Policy, 2015.

Chart C

Decomposition of wage growth based on a Phillips curve model

(annual percentage changes and percentage point contributions; all values in terms of deviations from their long-term mean)



Sources: Eurostat and ECB calculations.
Notes: The grey line shows deviations of the annual growth rate of compensation per employee from its long-term mean. Contributions (including residuals) are also shown as deviations from their long-term mean. They are calculated based on an equation in which compensation per employee (the annualised quarterly growth rate of the seasonally adjusted series) is regressed against its own lag, lagged inflation, productivity per employee, the lagged unemployment rate and a constant.

1.5 Money and credit developments

Low interest rates and the effects of the ECB's monetary policy measures continued to support money and credit dynamics. Money growth stabilised in 2016 at a robust level, while the gradual recovery in credit growth continued.

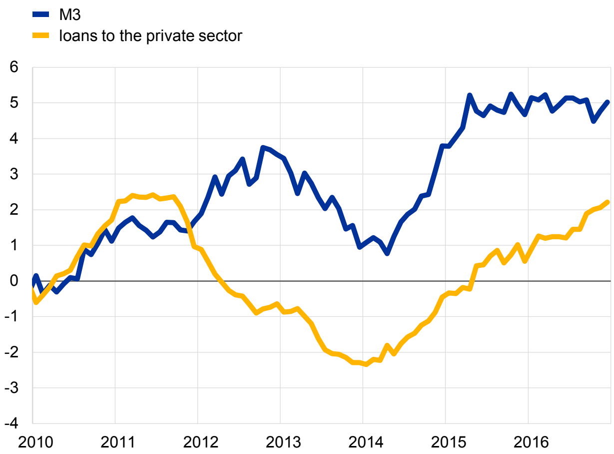
Money growth remained broadly stable

In 2016 broad money growth remained broadly stable, although M3 dynamics weakened somewhat in the second half of 2016 (see Chart 17). In December 2016 annual M3 growth stood at 5.0%, compared with 4.7% at the end of 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 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 non-financial corporations (NFCs), was strong, but moderated from its peak in mid-2015. It stood at 8.8% in December 2016, compared with 10.7% in December 2015.

Chart 17

M3 and loans to the private sector

(annual percentage changes)



Source: ECB.

As regards the other main components of M3, the low remuneration of less liquid monetary assets contributed to the ongoing contraction of short-term deposits other than overnight deposits (i.e. M2 minus M1), which remained a drag on M3 growth. The growth rate of marketable instruments (i.e. M3 minus M2), which have a small weight in M3, recovered somewhat, supported by solid growth in money market fund shares/units and increased holdings of banks' short-term debt securities.

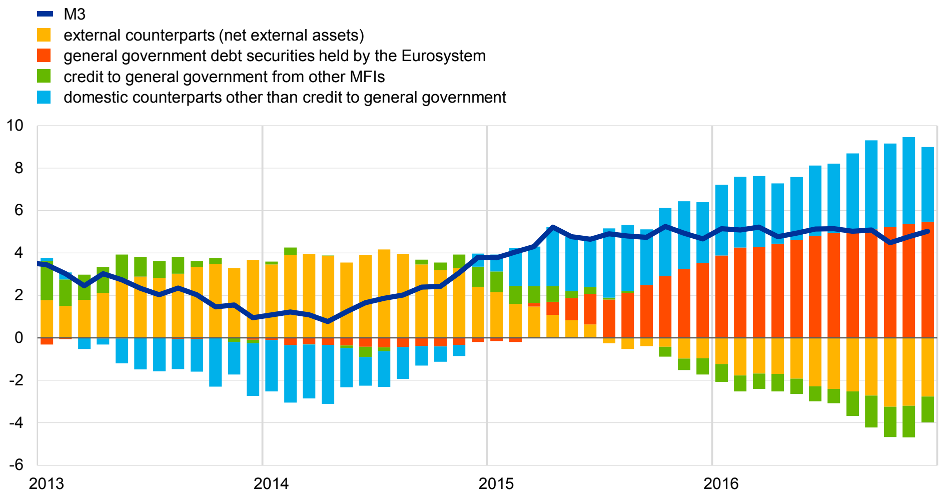
Money creation was again driven by domestic sources

Domestic counterparts other than credit to general government exerted a positive impact on M3 growth during 2016 (see the blue bars in Chart 18). On the one hand, this reflected the gradual recovery in the growth of credit to the private sector. On the other hand, the significantly negative annual rate of change in MFIs' longer-term financial liabilities (excluding capital and reserves) continued to support M3 growth. This development was in part explained by the relatively flat yield curve, linked to the ECB's monetary policy measures, which has made it less favourable for investors to hold long-term deposits and bank bonds. The attractiveness of the targeted longer-term refinancing operations (TLTROs) as an alternative to longer-term market-based bank funding also played a role.

Chart 18

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.

Purchases of debt securities in the context of the public sector purchase programme (PSPP) had a considerable positive impact on M3 growth (see the red bars in Chart

18). By contrast, the contribution of credit to general government from monetary financial institutions excluding the Eurosystem was negative (see the green bars in Chart 18). Meanwhile, the net external asset position of euro area MFIs (which is the mirror image of the net external liability position of euro area non-MFIs settled via banks) remained the main drag on annual M3 growth (see the yellow bars in Chart 18). This development notably reflected ongoing capital outflows from the euro area and portfolio rebalancing in favour of non-euro area investment instruments. PSPP-related sales of euro area government bonds by non-residents made an important contribution to this trend, as their proceeds were invested mainly in non-euro area instruments.

Credit growth continued to recover at a moderate pace

The gradual recovery of credit growth reflected developments in loans to the private sector (see Chart 17). The annual growth rate of MFI credit to euro area residents (including the general government and the private sector) increased throughout 2016, to stand at 4.7% in December, up from 2.3% in December 2015. An improvement in dynamics was noticeable in particular for loans to NFCs. Growth in loans to NFCs has recovered substantially from the trough of the first quarter of 2014. This development was facilitated by significant declines in bank lending rates supported by a further reduction in bank funding costs, which was notably driven by the ECB’s non-standard monetary policy measures. However, the consolidation of bank balance sheets and still high levels of non-performing loans in some countries continue to curb loan growth.

Moreover, as indicated by the January 2017 euro area bank lending survey, changes in loan demand across all categories supported a recovery in loan growth, while credit standards for loans to enterprises are broadly stabilising. This survey identified the low general level of interest rates, merger and acquisition activities, corporate restructuring and housing market prospects as important drivers of increasing loan demand. In this context, the APP had a net easing impact on credit standards and particularly on credit terms and conditions. Banks also reported that the additional liquidity from the APP and the TLTROs was used to grant loans, as well as to replace funding from other sources. They also indicated that the ECB’s negative deposit facility rate had a positive impact on lending volumes, while contributing to a narrowing of loan margins.

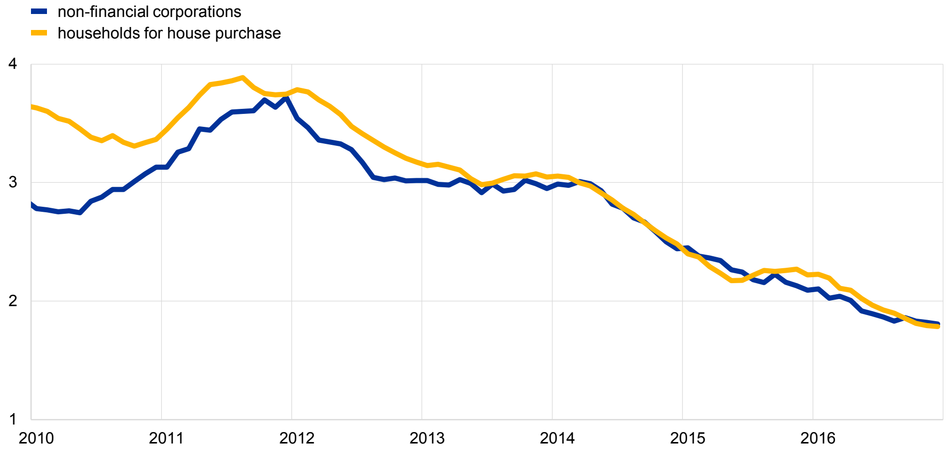
Bank lending rates charged to households and non-financial corporations declined to historical lows

The ECB’s accommodative monetary policy stance, a strengthened balance sheet situation and receding fragmentation in financial markets in general have supported a decrease in banks’ composite funding costs, which reached historical lows. Since June 2014 banks have been passing on the decline in their funding costs in the form of lower lending rates (see Chart 19), which also declined to all-time lows. Between the beginning of June 2014 (the start of the ECB’s credit easing) and December

2016, composite bank lending rates for NFCs and households decreased by around 110 basis points. In addition, bank lending rates for both NFCs and households continued to show reduced dispersion across countries.

Chart 19
Composite bank lending rates for non-financial corporations and households

(percentages per annum)



Source: ECB.
Note: The indicator for the composite bank lending rate is calculated by aggregating short and long-term rates using a 24-month moving average of new business volumes.

1.6 Fiscal policy and structural reforms

The euro area fiscal deficit continued to decline in 2016, mainly driven by lower interest payments and a favourable cyclical position, while the euro area fiscal stance was expansionary. The euro area public debt ratio continued to fall. However, in a number of countries the debt level remains high, which calls for further fiscal efforts and a more growth-friendly fiscal policy to set public debt ratios firmly on a downward path. Stepping up the implementation of reforms in the business and regulatory environment would help increase the euro area's growth potential. In addition, to boost employment, comprehensive labour market reforms are needed.

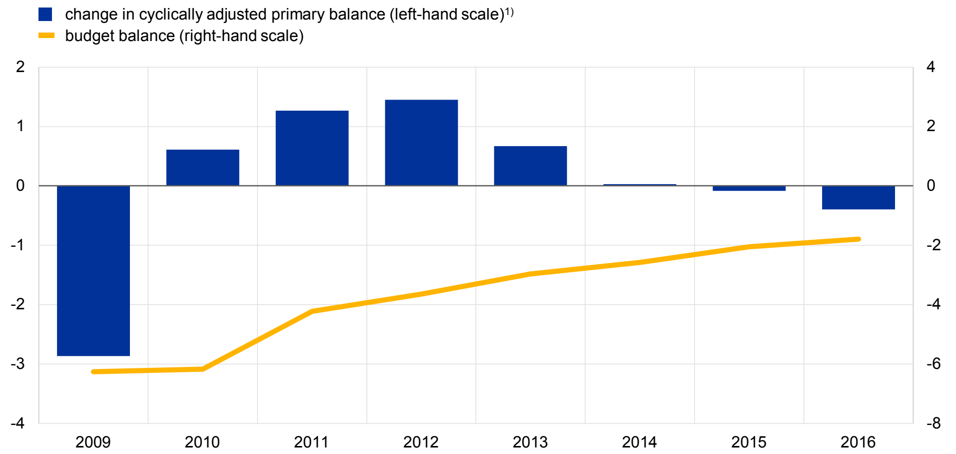
Fiscal deficits declined further in 2016

Based on the December 2016 Eurosystem staff macroeconomic projections, the euro area general government fiscal deficit declined from 2.1% of GDP in 2015 to 1.8% of GDP in 2016 (see Chart 20). This is broadly similar to the European Commission's winter 2017 economic forecast. The reduced deficit was a result of lower interest payments and a favourable cyclical position, which more than offset the worsening of the cyclically adjusted primary balance. The improvement in the aggregate euro area fiscal deficit reflected improved fiscal positions in most euro area countries.

Chart 20

Budget balance and fiscal stance

(as a percentage of GDP)



Sources: Eurostat and December 2016 Eurosystem staff macroeconomic projections.
1) Change in the cyclically adjusted primary balance net of the budgetary impact from government assistance to the financial sector.

The euro area fiscal stance, which is measured by the change in the cyclically adjusted primary balance net of the budgetary impact from government assistance to the financial sector, was expansionary in 2016 (see Chart 20).[20] This was mostly the result of discretionary fiscal measures on the revenue side, such as cuts in direct taxes in a number of euro area countries. It was also supported by relatively dynamic growth in social payments and intermediate consumption. There is evidence that a number of countries may have used part of the interest savings to increase primary spending rather than to reduce their public debt levels or to build up buffers. The inflow of refugees had a smaller impact on public finances than in the previous year.

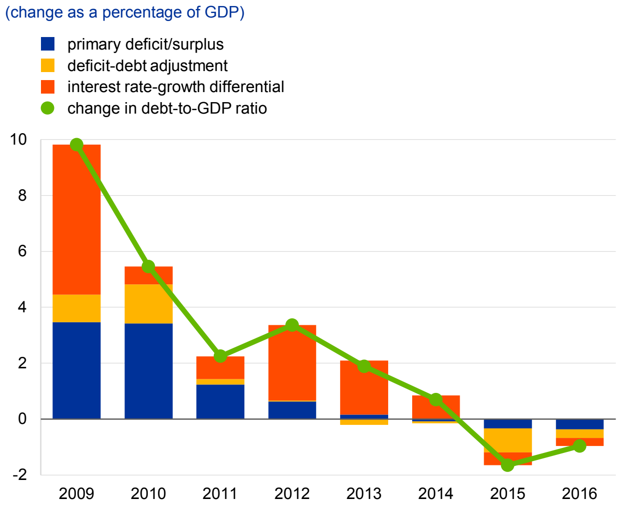
The euro area public debt ratio continued to fall

The euro area government debt-to-GDP ratio continued to decline gradually from its peak in 2014. Based on the December 2016 Eurosystem staff macroeconomic projections, the debt-to-GDP ratio fell from 90.4% in 2015 to 89.4% in 2016. The improvement in 2016 was supported in roughly equal measure by three factors: (i) favourable developments in the interest rate-growth differential, in the light of low interest rates and an economic recovery; (ii) small primary surpluses; and (iii) negative deficit-debt adjustments (see Chart 21).

20 For a discussion of the concept of the euro area fiscal stance, see the article entitled "The euro area fiscal stance", *Economic Bulletin*, Issue 4, ECB, 2016. Assessing the appropriateness of the euro area fiscal stance is not straightforward. Such an assessment needs to balance various objectives, such as sustainability and stabilisation needs, and should account for measurement problems, notably with respect to the output gap.

Chart 21

Drivers of general government debt



Sources: Eurostat and December 2016 Eurosystem staff macroeconomic projections.

In a few countries, however, public debt levels are still high and even increasing. This is all the more worrying as a high government debt burden makes the economy more vulnerable to macroeconomic shocks and financial market instability and limits the room for fiscal policy to act as a shock absorber.[21] Thus, countries with high debt-to-GDP ratios in particular should set their public debt ratios firmly on a downward path, in full compliance with the Stability and Growth Pact (SGP). Containing risks to debt sustainability is also crucial from a longer-term perspective, in view of substantial challenges from population ageing reflected in rising pension, healthcare and long-term care costs. The 2016 healthcare report by the European Commission identified key reform needs in the EU countries to contain spending pressures in the area of health and long-term care.[22]

Available fiscal space varied across countries

While further fiscal consolidation efforts are indispensable for several euro area countries to ensure fiscal sustainability, other countries have fiscal space to use, while fully complying with the SGP. The SGP allows for some flexibility, which is potentially conducive to addressing stabilisation needs at the national level. For example, the SGP offers some leeway with regard to public investment and the costs of structural reforms.

The size of the fiscal space and its use varied across euro area countries. Some countries, such as Germany, made use of available fiscal space, for instance to accommodate the sizeable budgetary impact of the refugee influx. By contrast, countries without fiscal space were required to implement fiscal measures to ensure compliance with the SGP requirements. Some countries, such as Italy, Latvia and Lithuania, also benefited from room for higher deficits granted by the SGP flexibility provision on public investment, pension reforms and structural reforms.

To make the best use of available fiscal space, countries should direct their policy action towards well-tailored public investment spending, which can be expected to make a lasting contribution to economic growth in the medium term. Although the size of the macroeconomic effects is uncertain, public investment can be expected to have positive demand effects and raise potential output by increasing the stock of public capital.[23]

21 See the article entitled "Government debt reduction strategies in the euro area", *Economic Bulletin*, Issue 3, ECB, 2016.

22 See the "Joint report on health care and long-term care systems and fiscal sustainability", Institutional Paper 37, European Commission, October 2016.

23 See the article entitled "Public investment in Europe", *Economic Bulletin*, Issue 2, ECB, 2016.

Moreover, to support economic stabilisation, countries should also strive for a more growth-friendly composition of fiscal policies. On the expenditure side, spending reviews are a promising way to identify entitlements that do not necessarily result in welfare increases and would help to ensure a more efficient use of public money. On the revenue side, improving the growth-friendliness of the tax system and limiting tax evasion are important reform areas in a number of countries. In particular, reducing the labour tax wedge, i.e. the tax burden on labour income resulting from personal income tax and social security contributions, can have positive growth and employment effects.[24]

Mixed record of compliance with EU fiscal rules

Countries need to ensure strict compliance with the provisions of the SGP and a timely correction of debt sustainability risks. In 2016 euro area countries' compliance with the SGP was rather mixed, while on the implementation side a more forceful application of the fiscal rules would have been welcome to ensure that the SGP remains fully credible.

Fiscal consolidation is progressing, which also helped several countries to exit their excessive deficit procedures (EDPs). In 2016 EDPs were closed in a timely manner for Ireland and Slovenia, as well as for Cyprus, which was even one year ahead of its EDP deadline. Among the euro area countries, only France, Spain and Portugal remained under the corrective arm of the SGP in early 2017.[25]

Nevertheless, for a number of euro area countries the European Commission identified large consolidation gaps with respect to the SGP requirements in 2016 and thereafter, but this did not result in any material stepping-up of the respective procedures in the SGP.[26] For example, in relation to the country-specific recommendations published in May 2016, the Commission examined the breach of the debt criterion in Belgium, Italy and Finland in 2015. However, based on the assessment of the numerical debt benchmark and/or the relevant factors as outlined in the SGP, it decided against opening an EDP. Moreover, despite the failure of Spain and Portugal to take effective action, the Council followed in August 2016 the Commission recommendation not to impose fines. Instead, Spain was granted a two-year extension of the EDP deadline to 2018, together with a significant reduction of the required adjustment. For Portugal, which suffered from the fiscal costs of financial sector support in 2015, the EDP deadline was extended by one year to 2016. In addition, there was no proposal by the Commission to suspend parts of the European structural and investment funds.

[24] See, for example, Attinasi et al., "Budget-neutral labour tax wedge reductions: a simulation-based analysis for selected euro area countries", Discussion Paper No 26, Deutsche Bundesbank, 2016.

[25] Greece is subject to a financial assistance programme and thus is not covered by the fiscal surveillance assessments on SGP compliance.

[26] See the box entitled "Country-specific recommendations for fiscal policies under the 2016 European Semester", *Economic Bulletin*, Issue 4, ECB, 2016.

The European Commission published its assessment of the 2017 draft budgetary plans on 16 November 2016. It found that six countries under the preventive arm, namely Belgium, Italy, Cyprus, Lithuania, Slovenia and Finland, were at risk of non-compliance with the SGP requirements.[27] Among the countries under the corrective arm, France and – after having submitted an updated draft budgetary plan – also Spain were assessed to be broadly compliant with the provisions of the SGP. For Portugal, the threshold for a significant deviation was expected to be exceeded, although only by a very narrow margin. The Eurogroup stated on 5 December 2016 that Member States remaining in the corrective arm of the SGP should ensure a timely correction of their excessive deficit, appropriate convergence towards the medium-term objective thereafter, and respect of the debt rule.[28]

Better institutions are key to higher potential growth

Although the economic recovery is proceeding, structural medium-to-long-run challenges for euro area growth remain. Weak productivity growth, high levels of debt and structural unemployment hinder stronger economic growth and call for a renewed impetus from supply-side policies. There is ample evidence that weak trend GDP and employment growth is associated with a lower quality of national institutions (such as the control of corruption and the rule of law), as well as rigid labour and product market structures.[29] Indeed, sound institutions and economic structures are essential for the resilience and long-term prosperity of the euro area (see Chart 22).[30]

27 See the communication by the European Commission published on 16 November 2016. For an analysis of the Commission's assessment, see the box entitled "Review of draft budgetary plans for 2017 and the budgetary situation for the euro area as a whole", *Economic Bulletin*, Issue 8, ECB, 2016.

28 See the statement by the Eurogroup published on 5 December 2016.

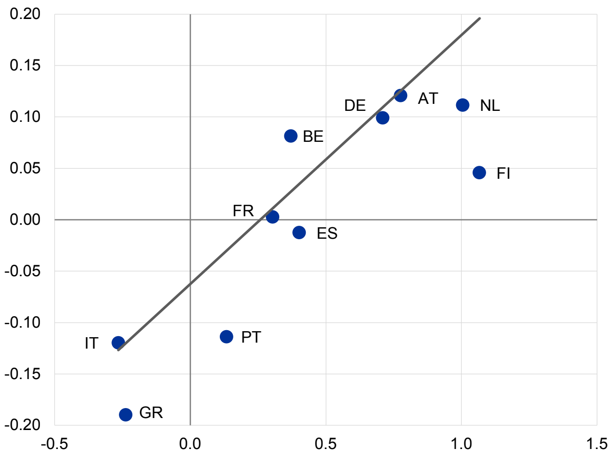
29 See, for example, Masuch et al., "Institutions, public debt and growth in Europe", *Working Paper Series*, No 1963, ECB, September 2016.

30 See also the article entitled "Increasing resilience and long-term growth: the importance of sound institutions and economic structures for euro area countries and EMU", *Economic Bulletin*, Issue 5, ECB, 2016.

Chart 22

Link between institutions and growth in Europe

(x-axis: institutional quality in 1999; y-axis: actual – expected growth 1999-2016)



Sources: Eurostat, World Bank and ECB calculations.
Notes: Institutional quality is measured as an average of the six World Bank Worldwide Governance Indicators (voice and accountability, government effectiveness, rule of law, regulatory quality, control of corruption, and political stability and absence of violence). On the y-axis, expected growth is the outcome of a simple catching-up regression, where the average per capita GDP growth between 1999 and 2016 depends only on the level of per capita GDP in 1999 and a constant.

A number of indicators suggest that the reform momentum in the euro area faded significantly after 2013 and reform implementation rates have fallen back to pre-crisis levels.[31] This slowdown in reforms is regrettable, since there are already examples of credible and well-targeted reforms implemented during the crisis that have resulted in substantial benefits for the euro area countries in question.[32]

Sluggish implementation of reforms raises concerns about euro area growth and employment prospects, and holds back further necessary improvements in the shock-absorption capacity of Monetary Union. Table 1 shows the progress achieved in the implementation of the European Commission’s 2016 country-specific recommendations (CSRs). Clearly, reform implementation has been rather limited across euro area countries. For example, none of the recommendations was fully addressed, while for only two of them substantial progress was registered. However, some progress could be seen in the majority of euro area countries in 2016 regarding reforms of framework conditions (e.g. improving the efficiency of insolvency frameworks, enhancing private sector debt restructuring and increasing small and medium-sized enterprises’ access to finance). Regarding fiscal-structural reforms, action continued to focus on reducing the tax wedge on labour, while some euro area countries also tried to enhance the efficiency of public administration and tax collection. With regard to reforms in the labour market or measures to increase competition in the services sector, progress has been much more limited, or even absent, in most euro area countries. Where there have been reforms, they have typically been carried out in a piecemeal manner. This has meant that potentially important complementarities between different reform areas have been neglected and opportunities have been missed to fully internalise demand-stimulating effects which emerge from raising expectations of higher future incomes.[33]

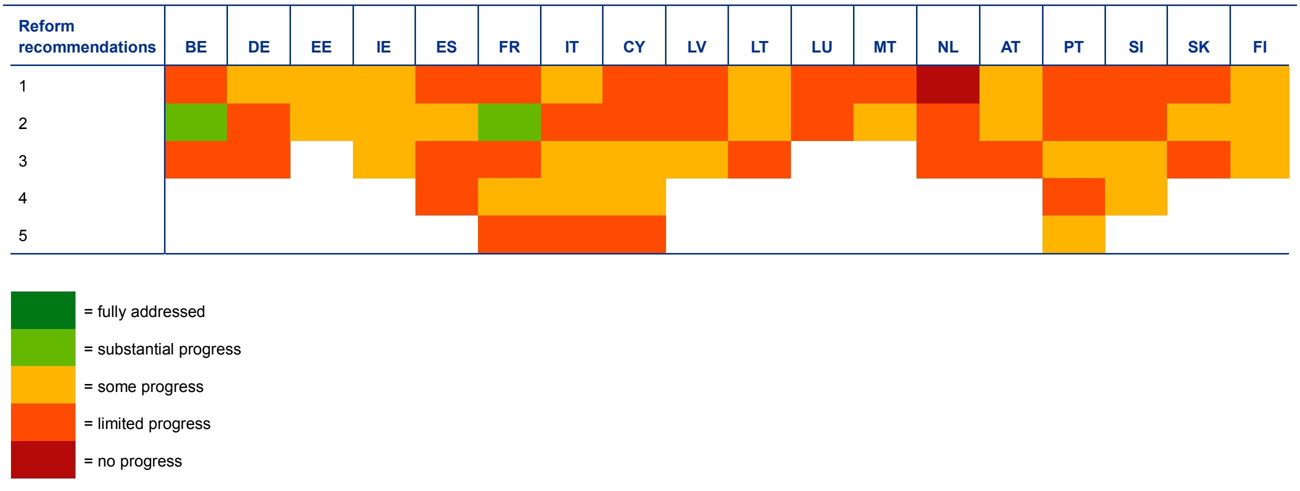
31 See, for example, the Going for Growth Interim Report, OECD, 2016.

32 See, for example, the box entitled “Recent employment dynamics and structural reforms” in the article “The employment-GDP relationship since the crisis”, *Economic Bulletin*, Issue 6, ECB, 2016, which shows that reforming countries increased the responsiveness of employment to GDP during the recovery; or the box entitled “Episodes of unemployment decline in the euro area and the role of structural reforms” in the article “Increasing resilience and long-term growth: the importance of sound institutions and economic structures for euro area countries and EMU”, *Economic Bulletin*, Issue 5, ECB, 2016, which shows that unemployment absorption episodes are often associated with a preceding period of structural reforms.

33 See, for example, Fernández-Villaverde, J., Guerrón-Quintana, P. and Rubio-Ramírez, J. F., “Supply-Side Policies and the Zero Lower Bound”, *IMF Economic Review*, Vol. 62(2), 2014, pp. 248-260.

Table 1

European Commission assessment of the implementation of the 2016 country-specific recommendations



Source: European Commission.
Notes: Greece was not included in the European Semester in 2016 because it is engaged in an economic adjustment programme and has thus not received any CSRs. The following categories are used to assess progress in implementing the 2016 CSRs: No progress: the Member State has not credibly announced or adopted any measures to address the CSR. Limited progress: the Member State has announced certain measures but these only address the CSR to a limited extent; and/or it has presented legislative acts in the governing or legislator body but these have not been adopted yet and substantial non-legislative further work is needed before the CSR will be implemented; and/or it has presented non-legislative acts, yet with no further follow-up in terms of implementation which is needed to address the CSR. Some progress: the Member State has adopted measures that partly address the CSR and/or has adopted measures that address the CSR, but a fair amount of work is still needed to fully address the CSR as only a few of the adopted measures have been implemented. Substantial progress: the Member State has adopted measures that go a long way in addressing the CSR, most of which have been implemented. Fully addressed: the Member State has implemented all measures needed to address the CSR appropriately. This is an overview table; for more details on country-specific reform recommendations across policy areas, see the European Commission's European Semester webpage.

Overall, governments should step up the implementation of business-friendly reforms. As shown above, some efforts to improve the business and regulatory environment were made in 2016, but the progress in recent years has been far too limited to align the euro area countries with global best practices. As discussed in Box 4, the untapped potential of reforms to boost productivity and employment remains substantial. Alongside measures to improve public infrastructure, action to enhance the efficiency of insolvency frameworks and to increase competition in product and services markets would also help to boost investment and ultimately aggregate demand. As a complement to these reform priorities, comprehensive labour market reforms are needed to increase labour market flexibility, reduce segmentation between various types of employment contract and address skill mismatches. Policies aimed at human capital development and labour mobility as well as active labour market programmes should also be stepped up to tackle high unemployment. Greater efficiency in public administration would also spur productivity growth and benefit the private sector.

A renewed stimulus to reform implementation is also needed at the EU level. The new economic governance structure embodied in the Commission's European Semester should foster reform implementation across the euro area, but the limited progress highlighted above shows that much more needs to be done. For example, as outlined in the Five Presidents' Report[34] published in 2015, a more binding convergence process towards resilient economic structures is needed in the medium to longer term. At the same time, pushing for more progress on the Single Market,

[34] Juncker, J.-C., Tusk, D., Dijsselbloem, J., Draghi, M. and Schulz, M., "Completing Europe's Economic and Monetary Union", European Commission, June 2015.

establishing a true capital markets union and completing the banking union will also help to build a more resilient and growth-friendly euro area.

Box 4
Reform priorities in the euro area for the business environment and product markets

There is ample scope for reform in the euro area to establish a more business-friendly climate, improve insolvency frameworks and increase competition in product and services markets. Such reforms are essential to boost productivity, attract foreign direct investment, increase business dynamism and stimulate investment in the euro area. The importance of business-friendly practices was also highlighted in the investment plan for Europe.[35] To complement and further develop some of the ideas presented in the main text of this report, this box looks at priority reform areas for the euro area, takes stock of the state of play and discusses benchmarking as a possible tool to energise the reform implementation process.

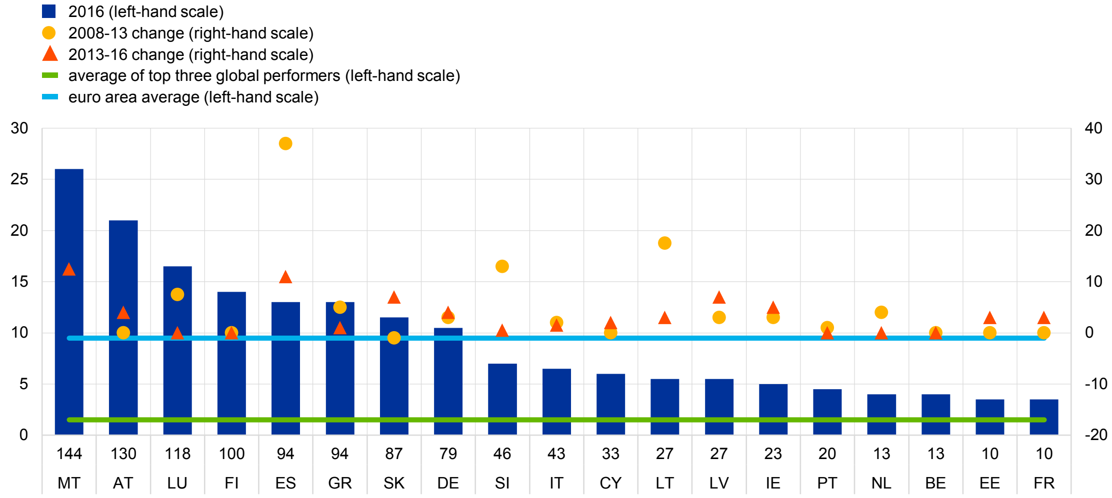
In a number of euro area economies, business conditions remain unfriendly owing to highly regulated product and labour markets and inefficient insolvency frameworks. In the World Bank's Doing Business 2017 report,[36] there are no euro area countries among the world's top ten performers for the overall segment. Likewise, euro area business practices remain some distance away from those of the world's best performers. For example, insolvency proceedings take on average slightly less than two years in the euro area, which is three times longer than the average for the three best-performing countries in the world. Furthermore, enforcing a contract takes more than 600 days on average in the euro area, but only about 200 days in the three best-performing countries across the globe. In addition, business practices continue to vary considerably across the euro area. For example, it takes less than four days to open a business in Estonia, whereas it takes almost a month in Malta (see Chart A). In New Zealand – the world's best performer in this area – less than a day is needed. Meanwhile, on average five procedures need to be undertaken to open a business in the euro area, ranging from three procedures in Belgium, Estonia, Finland and Ireland to nine in Germany and Malta (see Chart B), while the global best performer has just one procedure.

[35] See also the EU Council's conclusions on the third pillar of the EU investment plan, which identify a number of barriers to investment.

[36] For illustrative purposes, an overview of the indicators in a few specific areas covered by the World Bank's *Doing Business 2017* report is given. Similar conclusions can also be drawn from various other indicators (e.g. the OECD's sectoral regulation indicators or the World Economic Forum's global competitiveness indicators).

Chart A

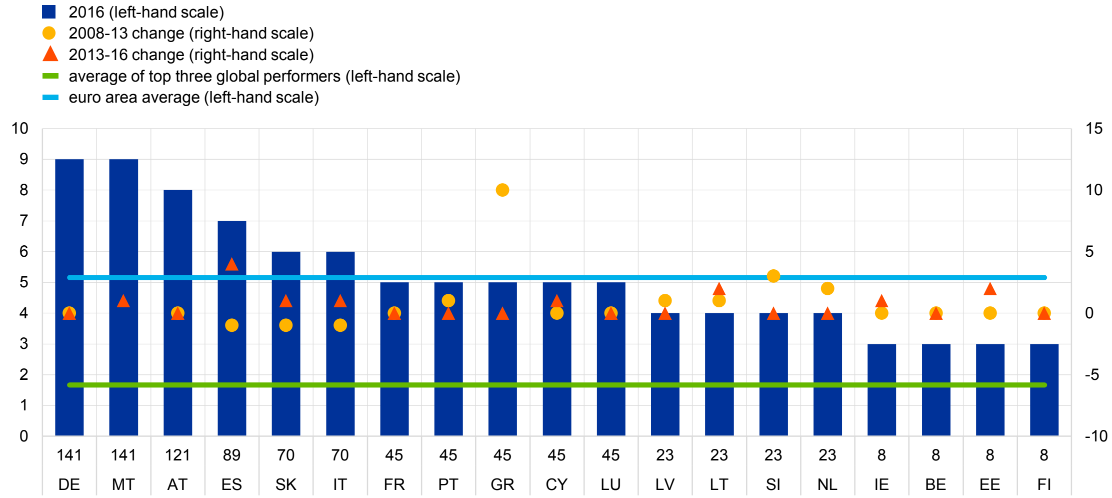
Number of days to start a business



Sources: *Doing Business 2017*, World Bank, and ECB calculations.
Notes: On the left-hand scale, the higher the value, the more costly it is to start a business as measured by the time needed to open a business. As a measure of the reforms implemented, the right-hand scale shows the change in the number of days to open a business over the periods 2008-13 (yellow dots) and 2013-16 (red triangles). A change in the implementation of reform greater (less) than zero means a country is moving closer to (further away from) best practice. The number below the chart indicates the current world ranking of the country. No value is available for Malta for 2008.

Chart B

Number of procedures to open a business



Sources: *Doing Business 2017*, World Bank, and ECB calculations.
Notes: On the left-hand scale, the higher the value, the more costly it is to start a business as measured by the number of procedures involved when opening a business. As a measure of the reforms implemented, the right-hand scale shows the change in the number of procedures involved when opening a business over the periods 2008-13 (yellow dots) and 2013-16 (red triangles). A change in the implementation of reform greater (less) than zero means a country is moving closer to (further away from) best practice. The number below the chart indicates the current world ranking of the country. No value is available for Malta for 2008.

Reforms to strengthen the regulatory environment and the rule of law, to make the resolution of non-performing loans more efficient and to remove obstacles to firms' entry and exit, together with action to address excessively complicated administrative procedures and inefficient insolvency frameworks, should be placed high on the euro area reform agenda. As discussed in the main text, the implementation of business-friendly reforms has been particularly weak in recent years, calling for a renewed impetus towards such policies.[37] In addition to the various measures to stimulate reform activity in the euro area described in the main text, benchmarking could also support the implementation of business environment and product market reforms. Structural indicators should be seen mainly as illustrative examples of the business environment in a particular country, but they can also help to identify best practices and set targets, and are therefore useful for the benchmarking process.

2 Monetary policy in support of the euro area recovery and a rise in inflation

2.1 The need for further monetary policy measures in 2016

Worsened economic and financial conditions warranted close monitoring at the start of the year

The monetary policy measures taken by the ECB in recent years have been geared towards supporting the euro area economic recovery and a return of inflation to levels below, but close to, 2% over the medium term. These measures, which include targeted longer-term refinancing operations (TLTROs), the asset purchase programme (APP) and the negative rate on the deposit facility, have been introduced in various steps and have proven to be very effective in underpinning the recovery and fending off disinflationary pressures. However, headwinds during 2016 delayed the convergence of inflation to levels in line with the Governing Council's objective, necessitating further monetary policy action throughout the year.

At the start of 2016 economic and financial conditions deteriorated amid heightened uncertainty, geopolitical risks and more pronounced volatility in financial and commodity markets. In particular, concerns about the direction of the global economy increased in the light of the slowdown in emerging markets, especially in China. In addition, inflation dynamics continued to be weaker than expected, mainly owing to the renewed sharp fall in oil prices and subdued wage growth. In conjunction with declining short and medium-term inflation expectations, this signalled increased risks of second-round effects as there was a possibility that weak inflation expectations might cause wage-setting parties to delay wage increases.

Against this background, in January the Governing Council reaffirmed its forward guidance by emphasising that it expected the key ECB interest rates to remain at present or lower levels for an extended period of time, and well past the horizon of the net asset purchases. Moreover, as the strength and persistence of the

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

headwinds were uncertain, the Governing Council saw the need to review and possibly reconsider the monetary policy stance at the monetary policy meeting in March 2016, when more information, including the new staff projections, would be available.

In the first quarter the prospect of a sustained adjustment in the path of inflation towards the Governing Council's objective of below, but close to, 2% over the medium term diminished. In particular, financial conditions tightened, especially in the equity and foreign exchange markets, carrying a risk of translating into tighter financing conditions for the real economy. Incoming information also indicated that the economic recovery had been losing momentum and inflation had declined again into negative territory. While much of this decline was due to falling oil prices, underlying price pressures were also weaker than previously anticipated. Medium-term market-based inflation expectations also decreased, increasing further the risks of second-round effects. The March ECB staff projections for inflation were revised down substantially, implying another postponement of the date at which inflation was projected to return to the Governing Council's objective of below, but close to, 2%.

A gloomier outlook necessitated a forceful monetary policy response in March

Against this background, there was a strong case for the Governing Council to reconsider its monetary policy stance and provide further substantial monetary stimulus to counteract heightened risks to the ECB's price stability objective. Consequently, the Governing Council introduced a comprehensive package of monetary policy measures in March 2016.

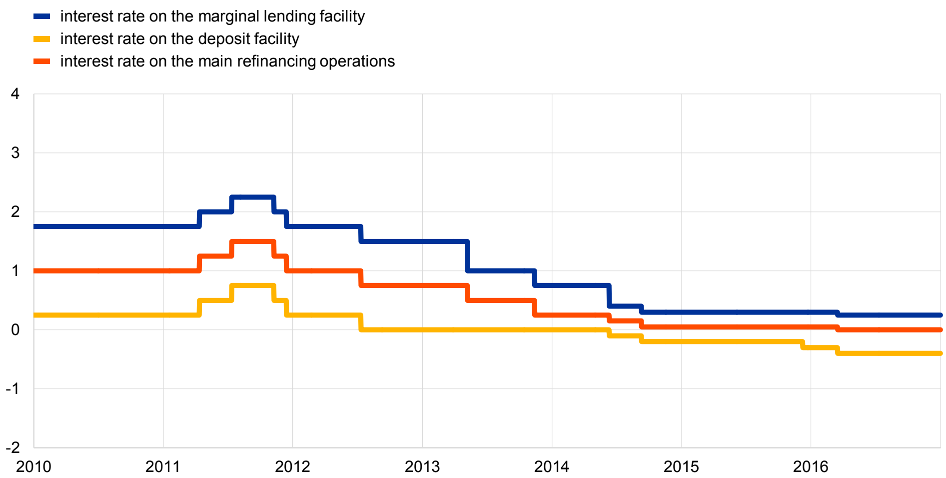
At its March meeting the Governing Council decided to: (i) lower the key policy rates, and in particular cut the rate on the deposit facility to -0.40%[38]; (ii) expand the monthly purchases under the APP to €80 billion starting in April 2016 and increase the issuer and issue share limits for the purchases of certain types of securities; (iii) include a new corporate sector purchase programme (CSPP) in the APP, for purchasing investment-grade euro-denominated bonds issued by non-bank corporations established in the euro area; and (iv) launch a new series of four targeted longer-term refinancing operations (TLTRO-II), each with a maturity of four years, starting in June 2016. Moreover, the Governing Council continued to clarify in its forward guidance that the key ECB interest rates were expected to remain at present or lower levels for an extended period of time, and well past the horizon of the net asset purchases, and reaffirmed that the purchases should run until the end of March 2017, or beyond, if necessary, and in any case until the Governing Council saw a sustained adjustment in the path of inflation consistent with its inflation objective.

38 The Governing Council also decided to cut the main refinancing operation and marginal lending facility rates by 5 basis points each (to 0% and 0.25% respectively).

This comprehensive set of measures aimed to further ease private sector borrowing conditions and stimulate credit provision to the private sector, thereby reinforcing the momentum of the euro area recovery and accelerating the return of inflation to the desired levels. The measures also helped to mitigate pressure observed on the financial market earlier in the year and prevent it from undermining the pass-through of the accommodative monetary policy stance (see Section 2.2 of Chapter 1). The cut in the deposit facility rate was intended to induce a further easing of credit conditions (see Chart 23). That is, banks with liquidity holdings above the minimum reserve requirement would be incentivised to use the liquidity either to purchase other assets or to grant more loans to the real economy. In this way, the negative rate on the deposit facility reinforced the APP by strengthening portfolio rebalancing effects.

Chart 23
Key ECB interest rates

(percentages per annum)



Source: ECB.
Note: The latest observation is for 7 December 2016.

TLTRO-II was designed to be an important element of credit easing and credit creation, fostering the transmission of monetary policy through the bank lending channel. While the maximum interest rate to be charged was set at the rate on the main refinancing operations at allotment, the actual interest rate applied could be as low as the rate on the deposit facility if a particular bank's lending exceeded its predefined benchmark.[39]

The introduction of the CSPP further strengthened the pass-through of the Eurosystem's asset purchases to the real economy. To benefit as many companies

39 In contrast to the first series of TLTROs, no early repayment obligations were introduced for TLTRO-II. For details, see Annex I of Decision (EU) 2016/810 and the press release on TLTRO-II of 10 March 2016.

and sectors as possible, the universe of eligible assets was kept broad.[40] CSPP purchases were in principle possible in both the primary and secondary markets.[41]

The euro area showed resilience in the second half of 2016, but weakness in underlying inflation was protracted

The policy package decided upon in March 2016, together with the substantial monetary stimulus already in place, was instrumental in supporting the resilience of the euro area economy to global and political uncertainty. Following the outcome of the UK referendum on EU membership in mid-2016, financial market volatility initially increased, but markets overall showed encouraging resilience and calmed down again fairly quickly. The fact that central banks worldwide stood ready to provide liquidity, if needed, coupled with a stringent regulatory and supervisory framework for euro area banks, and the ECB's accommodative monetary policy measures were conducive to this resilience.

At the same time, the potential future impact of the UK referendum outcome and other prevailing geopolitical uncertainties, together with subdued growth prospects in emerging markets, continued to weigh on foreign demand and were initially seen to pose downside risks to the euro area's economic prospects for the second half of the year. This was also reflected in the September 2016 ECB staff macroeconomic projections, which revised the euro area growth forecast slightly downwards compared with the June exercise. In addition, underlying price pressures continued to lack a convincing upward trend and remained a source of concern. In particular, the outlook for growth and inflation in the euro area remained conditional on very supportive financing conditions, which to a large extent reflected the accommodative monetary policy stance.

The Governing Council therefore continued in the autumn to monitor economic and financial market developments very closely and underlined its commitment to preserve the very substantial amount of monetary support necessary to secure a sustained convergence of inflation towards levels below, but close to, 2% over the medium term. Moreover, to increase its readiness and capacity to act if needed, the Governing Council tasked the relevant Eurosystem committees with exploring options that would ensure a smooth implementation of the APP until March 2017, or beyond, if needed.

Towards the end of the year, the euro area recovery continued to show resilience in the face of prevailing uncertainties, aided by the continued strong pass-through of the monetary policy measures to the euro area real economy. The recovery proceeded at a moderate but firming pace, mostly on the back of strengthening

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40 The Eurosystem's collateral framework is the basis for determining the eligibility of corporate sector securities to be purchased under the CSPP, along with specific definitions of non-bank corporations. For further details, see Decision (EU) 2016/948.

41 Several safeguards regarding the prohibition of monetary financing were incorporated in the CSPP framework. For example, for debt instruments issued by entities that qualify as public undertakings, purchases were limited to the secondary market only.

domestic demand, real disposable income growth, sustained employment creation and still very favourable financing conditions. Inflation also picked up owing to rising energy prices and was set to recover further.

The December policy package aimed to preserve the very substantial degree of monetary accommodation

The scenario of a gradual uptrend in inflation still relied to a considerable degree on accommodative monetary policy support. Given the protracted weakness in underlying inflation, a sustained convergence of inflation towards the desired levels was seen as unlikely to be achieved with sufficient confidence. Against this background, preserving the very substantial degree of monetary accommodation beyond March 2017 was considered warranted.

Therefore, at its December meeting, the Governing Council decided to: (i) extend the horizon of its net asset purchases beyond March 2017 by announcing the continuation of the APP – alongside the reinvestment of maturing securities[42] – at a monthly pace of €60 billion from April 2017 until the end of December 2017, or beyond, if necessary, and in any case until the Governing Council saw a sustained adjustment in the path of inflation consistent with its inflation aim; and (ii) adjust the parameters of the APP as of January 2017 to ensure its continued smooth implementation, by decreasing the minimum remaining maturity for eligible securities under the public sector purchase programme from two years to one year and by permitting purchases of securities with a yield to maturity below the interest rate on the ECB's deposit facility to the extent necessary.[43] The key ECB interest rates were kept unchanged and the Governing Council continued to expect them to remain at present or lower levels for an extended period of time, and well past the horizon of the net asset purchases. Moreover, the Governing Council reaffirmed its commitment to closely monitor the evolution of the outlook for price stability and, if warranted to achieve its objective, to act by using all the instruments available within its mandate. In particular, the Governing Council emphasised that if, in the meantime, the outlook were to become less favourable, or if financial conditions were to become inconsistent with further progress towards a sustained adjustment of the path of inflation, it intended to increase the programme in terms of its size and/or duration.

These decisions aimed to ensure that financial conditions in the euro area remained very favourable, which continued to be crucial to achieve the ECB's price stability objective. In particular, the extension of purchases under the APP over a longer horizon was intended to ensure more persistent support to financing conditions and, therefore, a more lasting transmission of the stimulus measures to underpin the moderate, but firming, recovery. At the same time, the more sustained market presence of the Eurosystem aimed to provide a source of stability in an environment

[42] In December 2015 the Governing Council had decided to reinvest the principal payments on the securities purchased under the APP as they matured, for as long as necessary. See the introductory statement to the December 2015 ECB press conference.

[43] At the same time, changes to the securities lending framework were introduced to enhance its effectiveness. See the press release dated 8 December 2016.

of heightened uncertainty, including concerns stemming from the potential longer-term consequences of the UK referendum and from possible policy implications following the US presidential election. The reduction in the monthly pace of purchases reflected the Governing Council's reassessment of the balance of risks, according to which confidence in the overall performance of the euro area economy had grown while deflation risks had largely disappeared. The decision overall aimed to protect financial conditions in the euro area and to allow the recovery to mature and strengthen, notwithstanding possible external or internal shocks.

Box 5
The distributional impact of monetary policy

Over recent years the ECB has taken a number of monetary policy measures in pursuit of its price stability objective. The key ECB interest rates have been reduced to historical lows and further unconventional measures, such as targeted longer-term refinancing operations and purchases of private and public sector securities, have been introduced to provide additional monetary accommodation.[44] These measures have been very successful in easing overall financial conditions and underpinning the outlook for real economic activity and inflation in the euro area. As with every "standard" monetary policy measure, the measures taken in recent years have impacted the whole constellation of market interest rates and asset prices. While such effects benefit the economy as a whole through their impact on employment creation, the eventual benefits of changes in financial variables can be unevenly distributed across economic sectors and individuals. This box aims to shed light on the distributional consequences of the monetary policy measures taken by the ECB in recent years, starting with direct financial channels before turning to more indirect growth and labour market effects.[45]

In the first instance, monetary policy has distributional effects via financial channels, affecting both financial income and wealth. When the central bank cuts policy rates or buys assets, and hence depresses interest rates across markets and maturities, there is an inevitable redistribution of financial income across sectors and households according to their net financial position, i.e. whether they are net savers or borrowers. Analysing the changes in net interest income over recent years can thus provide an important insight into the distributional impact of low interest rates, as this is the component of financial income that is the most directly affected by monetary policy. The impact of declining interest rates on net interest income (i.e. interest received minus interest paid) can be estimated by looking at how the return on the existing stock of assets and liabilities changed during the crisis. For the euro area as a whole, financial corporations on balance received less interest income over the period from the second quarter of 2014 to the third quarter of 2016, while non-financial corporations and governments saved on their net interest expenses (see Chart A).[46] The household sector, often thought to have lost out heavily given its net saver position, has in fact recorded only a mild loss in net interest income. For comparison, Chart A also shows the changes in net interest income since 2008, illustrating that the main effects had actually already taken place

44 For more information on the fundamental factors determining low interest rates, see the box entitled "Why are interest rates so low?", *Annual Report*, ECB, 2015.

45 See also the speech "Stability, equity and monetary policy" by Mario Draghi, 2nd DIW Europe Lecture, German Institute for Economic Research (DIW), Berlin, 25 October 2016.

46 Interest rate changes are passed on at different speeds, depending on the maturity of the asset or liability. The calculations are based on actual interest flows from the sectoral accounts, which implicitly reflect the maturity structure of the sectoral balance sheets.

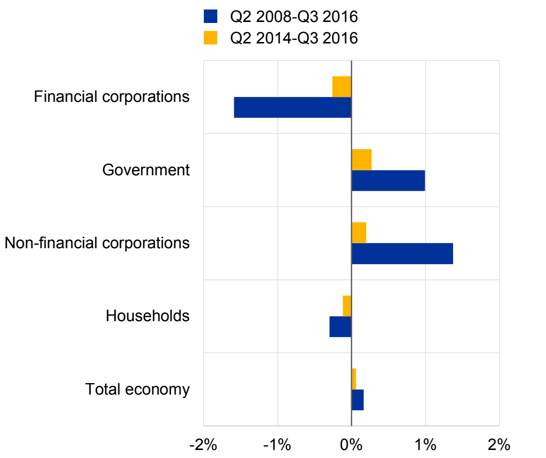
before the introduction of negative rates on the ECB's deposit facility in June 2014 and the start of the purchases of public sector securities in March 2015.

Such sectoral aggregates mask a wide dispersion of effects across individual households. Measuring individual effects is not straightforward, but some inferences can be made from the Eurosystem's Household Finance and Consumption Survey. Two survey waves have taken place so far, in 2010 and 2014, providing an opportunity to assess how net financial income has shifted between different households as interest rates have fallen.[47] For the euro area as a whole, net financial income as a share of total household income fell slightly, which is consistent with the sectoral data presented in Chart A. Underlying this, however, was a progressive distributional impact across households. The households with the lowest net wealth had a roughly unchanged position, reflecting a decline in their debt payments as well as in income from financial investments, while the wealthiest households lost the most, as their financial assets are much higher than their debt (see Chart B).

Chart A

Changes in net interest income across sectors

(percentage share of GDP)

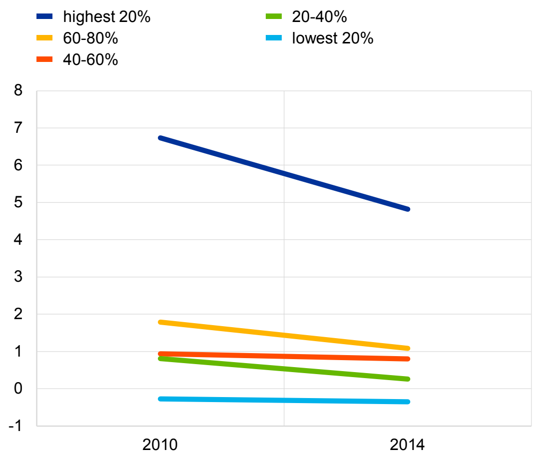


Sources: Eurostat and ECB calculations.
Notes: The chart reflects the changes from the second quarter of 2008 to the third quarter of 2016, and from the second quarter of 2014 to the third quarter of 2016, in the four-quarter moving average of net interest income. To exclude the impact of variations in the stocks of assets/liabilities on net interest income, the changes are computed by applying the asset and liability rates of return on the notional asset and liability stocks in the first quarter of 2008 and the first quarter of 2014 respectively. Changes in net interest income are expressed as percentages of GDP, with GDP fixed at the respective starting points. Interest payments/earnings are shown after the allocation of FISIM (financial intermediation services indirectly measured).

Chart B

Household net financial income

(percentage share of gross income)



Source: Eurosystem Household Finance and Consumption Survey (2010 and 2014).
Notes: Percentage ranges indicate net wealth classes, e.g. lowest 20% = the fifth of households with the lowest net wealth. Net financial flows are calculated as income from financial investments minus total debt payments. Shares are calculated as the sum of net financial flows of households in each net wealth class divided by the sum of household income for all households in the net wealth class.

The distributional consequences of monetary policy also depend on the second financial channel, namely wealth effects. The Household Finance and Consumption Survey also sheds some light on these effects. Euro area households that hold financial assets, such as stocks and bonds, are strongly concentrated at the top end of the net wealth distribution. As such, only a fairly small subset of the population benefits from capital gains in equity and bond markets; three-quarters of

[47] Net financial income is households' income from financial investments (interest and dividends) net of their total debt payments.

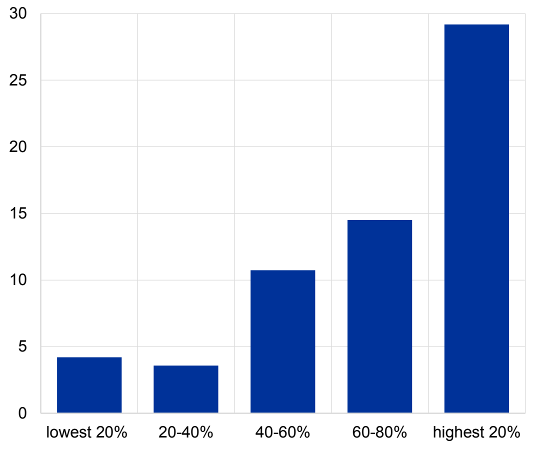
the population do not benefit at all. Home ownership, by contrast, is more evenly distributed across wealth groups. The median household has thus benefited from housing price increases.[48]

The most relevant period for assessing wealth effects is the one since mid-2014, as it is mostly asset purchases that are viewed as creating asset price inflation. An insight into the absolute and relative wealth effects across different wealth levels over this time period can be gained by estimating how the value of the stock of wealth held in mid-2014 (the last available data point) would have evolved if it were only impacted by changes in the prices of equities, bonds and houses since then.[49] For the euro area, there has been an absolute gain: households of all wealth levels have seen their wealth increase as a share of their mean income. This is because house prices within the euro area went up over the period, while bond prices on average rose modestly and stock prices on average actually fell. Wealthier households, however, benefited more in relative terms compared with poorer households (see Chart C).

Chart C

Estimated change in household net wealth

(percentage point change in mean net wealth as a percentage share of mean gross income in that wealth class, Q2 2014-Q2 2016)



Sources: ECB simulations and Eurosystem Household Finance and Consumption Survey.
Note: Percentage ranges indicate net wealth classes, e.g. lowest 20% = the fifth of households with the lowest net wealth.

A balanced assessment of the overall distributional effects of monetary policy must also include its macroeconomic effects. Even if low interest rates and high asset prices may not be of benefit to all sectors and individuals, there are positive distributional effects over the medium term related to boosting aggregate demand, lowering unemployment and contributing to price stability, all of which tend to reduce inequality.

Since the launch of the ECB's credit easing package in June 2014, the euro area has benefited from a more broad-based and domestic demand-driven recovery. This was not the case during the 2009-11 recovery, which relied to a large extent on net exports (see Box 2, Chart A). While pinning down the precise contribution of monetary policy to this is challenging, it can be observed that, since June 2014, the ECB's measures have triggered a downward convergence of bank lending rates and an upward trend in credit volumes. This has been driven in part by the reversal of the financial fragmentation observed in 2011-12. It also reflects a second factor: the ECB's measures have helped break a vicious circle between bank lending rates, macroeconomic outcomes and credit risk perceptions in vulnerable countries. The credit easing has helped reverse a negative distributional effect in terms of access to finance, and this is now feeding into aggregate demand.

As the economy has strengthened, the unemployment rate has fallen. The improvements in financial conditions as a result of the ECB's monetary policy are supporting lending to households

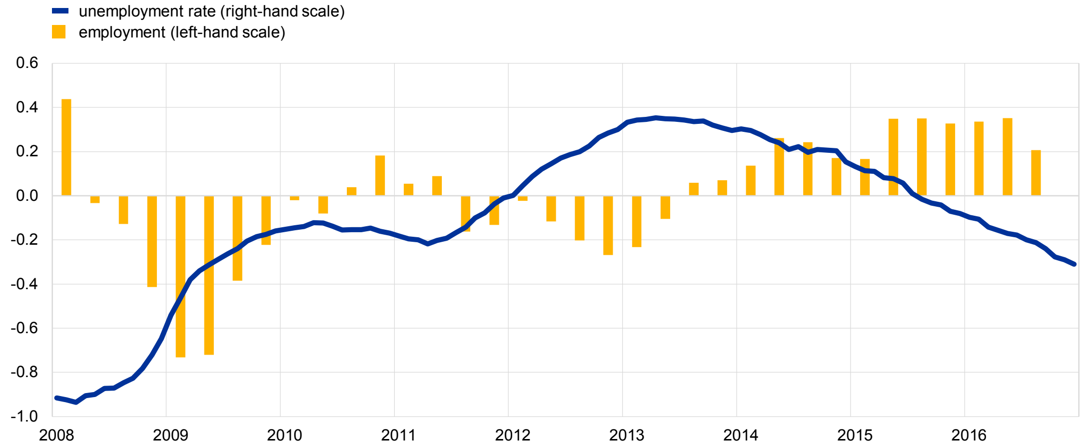
48 See Adam, K. and Tzamourani, P., "Distributional consequences of asset price inflation in the euro area", *European Economic Review*, Vol. 89, 2016, pp. 172-192.

49 The simulation assumes the changes in wealth components between mid-2014 and mid-2016 are driven by country-specific developments in house prices, stock prices and bond prices. It then draws out the implications for changes in the net wealth of individual households, which depend on the share of each asset held by each household.

and firms, which buoys consumption (of durable goods) and investment. This, in turn, has supported economic growth and employment (see Chart D). Job creation should benefit poorer households in particular, as their employment situation is most sensitive to the state of the economy. In turn, this distributive feature further supports economic growth given that lower-income households tend to have a higher marginal propensity to consume out of income. Indeed, during the recent period of robust employment growth, real disposable income and consumption have also risen strongly (see Chart E).

Chart D
Labour market developments

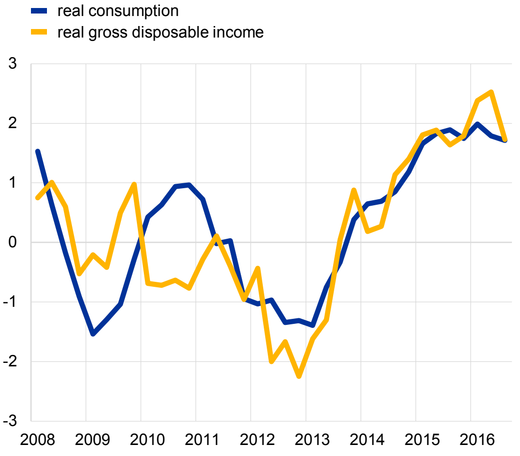
(quarterly percentage changes (employment), percentages (unemployment))



Sources: Eurostat and ECB calculations.
Note: The latest observations are for the third quarter of 2016 (employment) and December 2016 (unemployment rate).

Chart E
Consumption and real gross disposable income

(year-on-year percentage changes)



Sources: Eurostat and ECB calculations.
Note: The latest observations are for the third quarter of 2016.

The ECB monitors the distributional consequences of its monetary policy as they affect its transmission and thus adjustments in the inflation path. However, tackling any unwarranted redistributive effects is not in the realm of monetary policy in view of its primary objective of price stability. Governments can shape the income and wealth distribution via their policies, notably via targeted fiscal measures. More decisive growth-friendly structural and fiscal policies are crucial to complement the ECB's accommodative monetary policy stance so as to accelerate the return of the euro area economy to potential GDP, and to elevate the growth path of potential output. In turn, this would lessen the burden on monetary policy and allow it to revert to using its regular set of instruments – including positive interest rates.

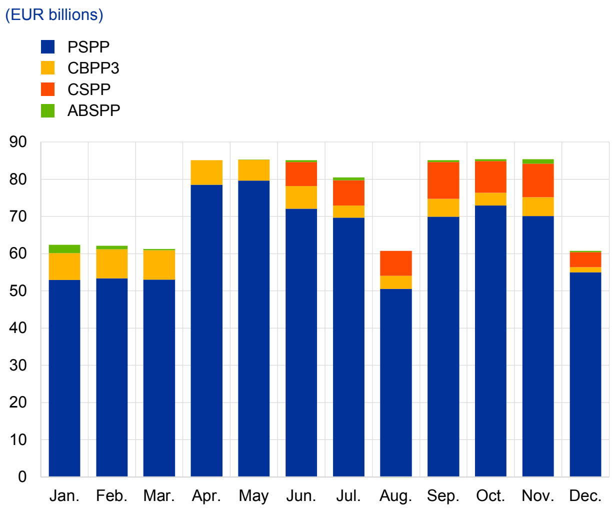
2.2 The pass-through of monetary policy to financial and economic conditions

The ECB's comprehensive policy measures continued to be effective in providing a substantial degree of accommodation

The monetary policy measures put in place since mid-2014, when the ECB first introduced broad-based easing policies, including credit easing, have been a key factor supporting the euro area recovery. The comprehensive policy measures – such as the asset purchases, targeted longer-term refinancing operations (TLTROs) and low policy rates – continue to filter through to the real economy. As a result, borrowing conditions for households and firms have eased considerably and credit creation has strengthened, thereby supporting aggregate spending across the euro area.

Chart 24

Monthly APP purchases by programme in 2016



Source: ECB.

A substantial degree of accommodation stemmed from the net purchases under the asset purchase programme (APP), which encompasses purchases of a wide range of private and public sector securities under its four sub-programmes: the public sector purchase programme (PSPP), the asset-backed securities purchase programme (ABSPP), the third covered bond purchase programme (CBPP3) and the corporate sector purchase programme (CSPP). The implementation of the APP continued to run smoothly in 2016. The flexibility provided within the APP allowed the combined average monthly purchases to be kept in line with the target set by the Governing Council, i.e. at €60 billion per month, on average, from January to March 2016 and €80 billion per month for the rest of the year. The purchases were, however, somewhat lower in August and December, months usually characterised by lower market liquidity, and slightly higher in the other months. The PSPP continued to represent by far the largest share of the overall purchases (see Chart 24).

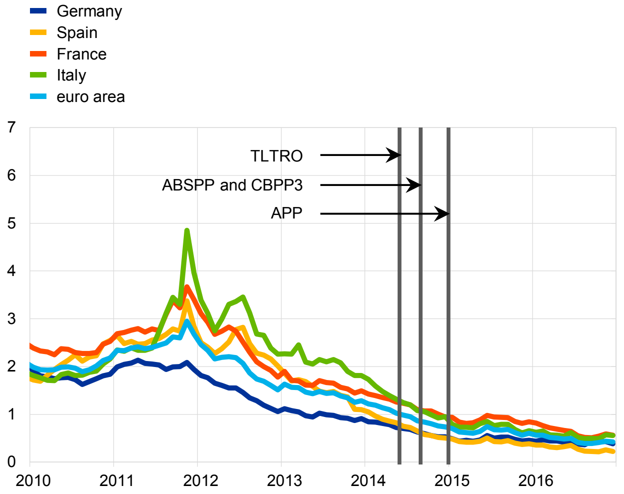
The pass-through of the ECB's measures via financial markets and the banking system continued successfully

The impact of the ECB's monetary policy measures on benchmark financial assets has been pronounced. In particular, the Eurosystem's asset purchases and the low interest rate environment have contributed to the marked decline in money market rates and sovereign bond yields since mid-2014.[50] The ECB's monetary policy also helped to partly shield euro area bond market conditions from rising government bond yields in the United States at the end of 2016. The ECB's measures have furthermore influenced developments in other segments of the financial markets. More specifically, portfolio rebalancing and positive macroeconomic effects associated with the very substantial degree of monetary accommodation may have supported the recovery in stock prices. The nominal effective exchange rate of the euro fell overall in 2016.

Chart 25

Composite cost of debt financing for banks

(composite cost of deposit and non-secured market debt funding; percentages per annum)



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

The ECB's policy measures contributed to a significant improvement in banks' funding conditions in two ways. First, bank funding instruments were among the asset classes that saw a substantial compression of medium-to-long-term yields. This was supported by portfolio rebalancing effects from Eurosystem asset purchases and by scarcity effects owing to lower bond issuance by banks, which instead borrowed under TLTROs.[51] As a result, the composite cost of debt financing for banks decreased markedly (see Chart 25). Second, banks continued to replace more expensive, short-term market funding with TLTRO funding (and, in addition, used the option to roll over TLTRO-I with the cheaper TLTRO-II).[52] Three out of the four planned TLTRO-II operations were conducted in 2016, while the fourth is scheduled for March 2017.[53] The total take-up until end-2016 amounted to €506.7 billion, around 43% of euro area banks' total borrowing allowance under TLTRO-II.

The overall impact of the APP and the negative deposit facility rate on bank profitability has been limited, as the impacts on different components of banks' income largely offset each other (see Chart 26). On the one hand, the two measures compressed interest rates on a large set of financial assets, narrowed interest rate margins and thus contributed to lower net interest income. On the other hand, increases in the market value of sovereign bonds held by banks generated capital gains. In addition, the positive effects of the recent monetary policy measures on the economic outlook contributed to rising loan volumes and improving credit quality.

50 Since mid-2014 the GDP-weighted average of euro area ten-year government bond yields has fallen by around 90 basis points. The overall downward trend was interrupted towards the end of 2016 when sovereign yields followed the global steepening trend amid increased political uncertainty.

51 A first series of TLTROs (TLTRO-I) was announced on 5 June 2014 and a second series (TLTRO-II) on 10 March 2016. For more information on TLTRO-I, see the press release, and for more information on TLTRO-II, see Section 2.1 of Chapter 1.

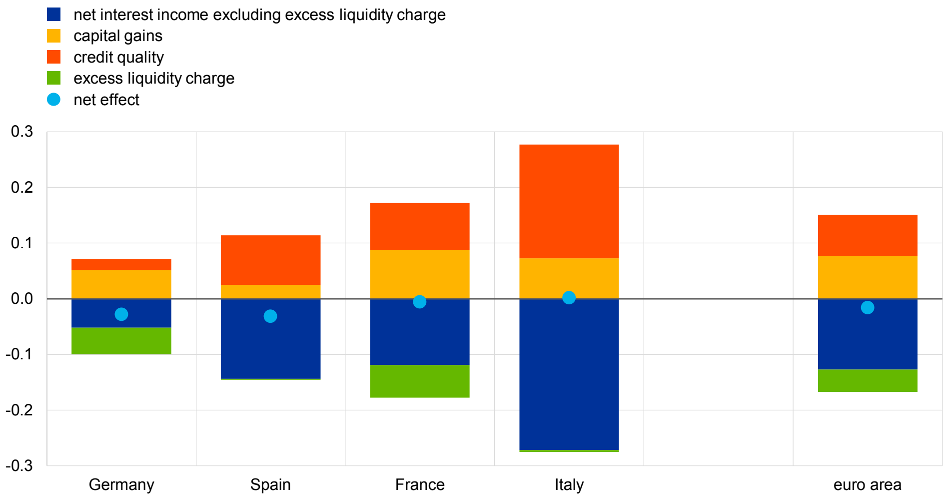
52 In 2016 €333 billion of TLTRO-I funds was replaced by TLTRO-II funds. The first three of the TLTRO-II operations provided estimated funding relief of 11 basis points.

53 The settlement of the TLTRO-II operations was scheduled for June, September and December 2016 and March 2017. The last operation will thus mature in March 2021.

Chart 26

Bank profitability, the APP and the negative deposit facility rate

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



Sources: European Banking Authority, ECB and ECB estimates.
Notes: Capital gains are based on data on a consolidated basis for 68 euro area banking groups included in the list of significant institutions under direct ECB supervision and in the 2014 EU-wide stress test. 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.

Euro area firms benefited from the ECB's accommodative monetary policy stance

The pass-through of the monetary stimulus to bank lending conditions and credit creation has been remarkable. Interest rates have fallen markedly across a broad spectrum of asset classes and credit markets since June 2014. As a result, euro area firms and households have experienced more favourable borrowing conditions. For example, bank lending rates for companies declined by more than 110 basis points between June 2014 and December 2016 (see Chart 19).

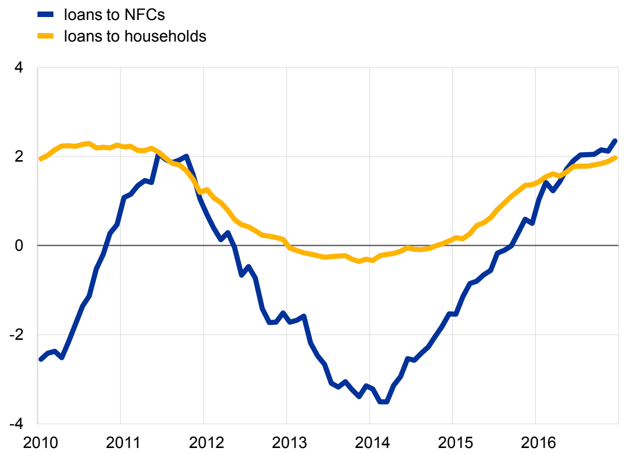
The easing is also being felt by small and medium-sized enterprises (SMEs) – the backbone of the euro area economy – which are heavily reliant on bank credit. Bank lending conditions for SMEs have improved further: since May 2014 bank lending rates on very small loans to companies have declined by around 180 basis points. Moreover, in the Survey on the Access to Finance of Enterprises in the euro area, SMEs continued to report a further improvement in their access to credit and an increased willingness of banks to provide credit at lower interest rates.[54] New bank credit to companies continues to be used mostly to finance investment projects, inventories and working capital.

[54] See Survey on the Access to Finance of Enterprises in the euro area – April to September 2016, ECB, November 2016.

Chart 27

MFI loans to NFCs and households

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



Source: ECB.

The Eurosystem's asset purchases and the low interest rate environment have incentivised banks to grant more loans, e.g. by reducing the attractiveness of investing in lower-yielding securities. At the same time, lowering the cost of TLTRO-II for banks actively engaged in lending also encouraged banks to extend more credit (as a bank can borrow more cheaply under TLTRO-II if its lending volume exceeds its benchmark). This supported an easing of credit standards and an improvement in the terms and conditions of bank loans, as indicated by the euro area bank lending survey.[55] Consequently, in a context of increasing credit demand, the gradual recovery in lending to the euro area private sector continued. Between May 2014 and December 2016, the annual rate of growth of loans to households increased from -0.1% to 2.0% and that of loans to non-financial corporations (NFCs) increased from -2.9% to 2.3% (see Chart 27).

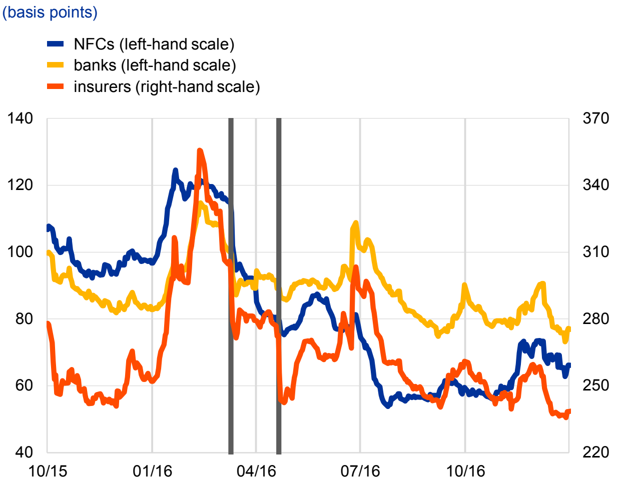
Initial evidence regarding the CSPP's contribution to easier financing conditions for firms has been encouraging. The announcement of the CSPP on 10 March 2016 strongly supported the ongoing contraction in spreads between yields on bonds issued by NFCs and a risk-free rate (see Chart 28).[56] Moreover, the CSPP contributed to the increase in the issuance of euro-denominated corporate bonds over the year (see Chart 29). Finally, as a result of portfolio rebalancing, the demand for bonds not eligible under the CSPP rose as well and was met by increased issuance. The CSPP also had important spillover effects on the financing conditions of enterprises, as banks faced with substitution of bank loans by corporate debt issuance reported higher competitive pressures and stronger margin compression on loans to large firms.

The implementation of the CSPP proceeded as envisaged at its launch, with purchases being well-diversified across ratings, sectors, countries and issuers. As at 31 December 2016 the Eurosystem held around €51 billion of non-bank corporate bonds issued by 225 different issuers.

55 More specifically, banks continued to report that the TLTROs, the APP and the negative deposit facility rate contributed to more favourable terms and conditions on loans. The July 2016 bank lending survey included specific questions on the impact of the TLTROs. The October 2016 bank lending survey included specific questions on the impact of the APP and the negative deposit facility rate on lending conditions and volumes.

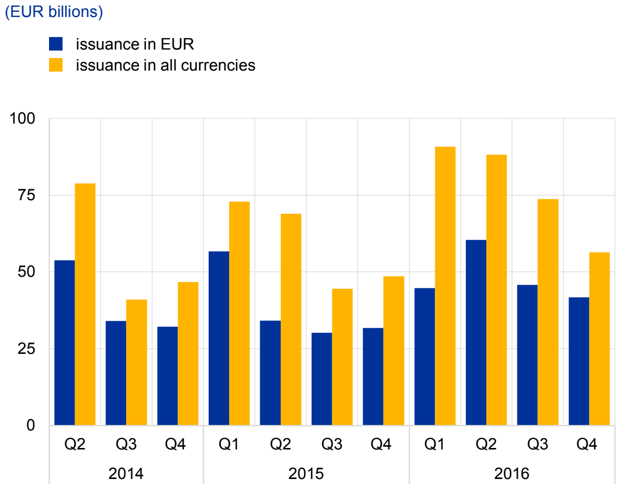
56 Empirical estimates indicate that most of this contraction was due to the launch of the CSPP. See the box entitled "The corporate bond market and the ECB's corporate sector purchase programme", *Economic Bulletin*, Issue 5, ECB, 2016.

Chart 28
Investment-grade corporate bond spreads



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 and 21 April. The indices also contain subordinated bonds.

Chart 29
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 EUR" denotes new issues denominated in euro by NFCs headquartered in the euro area. "Issuance in all currencies" denotes all new issues by NFCs headquartered in the euro area.

The ECB's accommodative policy significantly supported macroeconomic developments in the euro area

Overall, the monetary policy measures introduced by the ECB since June 2014 have had significant macroeconomic effects. Without these measures, both growth and inflation developments would have been substantially more subdued in 2016. In particular, deflation risk vanished, aided by the ECB's measures.

Box 6
Size and composition of the Eurosystem balance sheet

Since the financial crisis started in 2007-08, the Eurosystem has been using its balance sheet to perform a variety of monetary policy interventions, altering its size and composition over time. These interventions include operations to provide funding to counterparties as well as asset purchases in various market segments to improve the transmission of monetary policy and to ease financing conditions in the euro area. By the end of 2016 the size of the Eurosystem balance sheet had reached a historical high of €3.7 trillion.

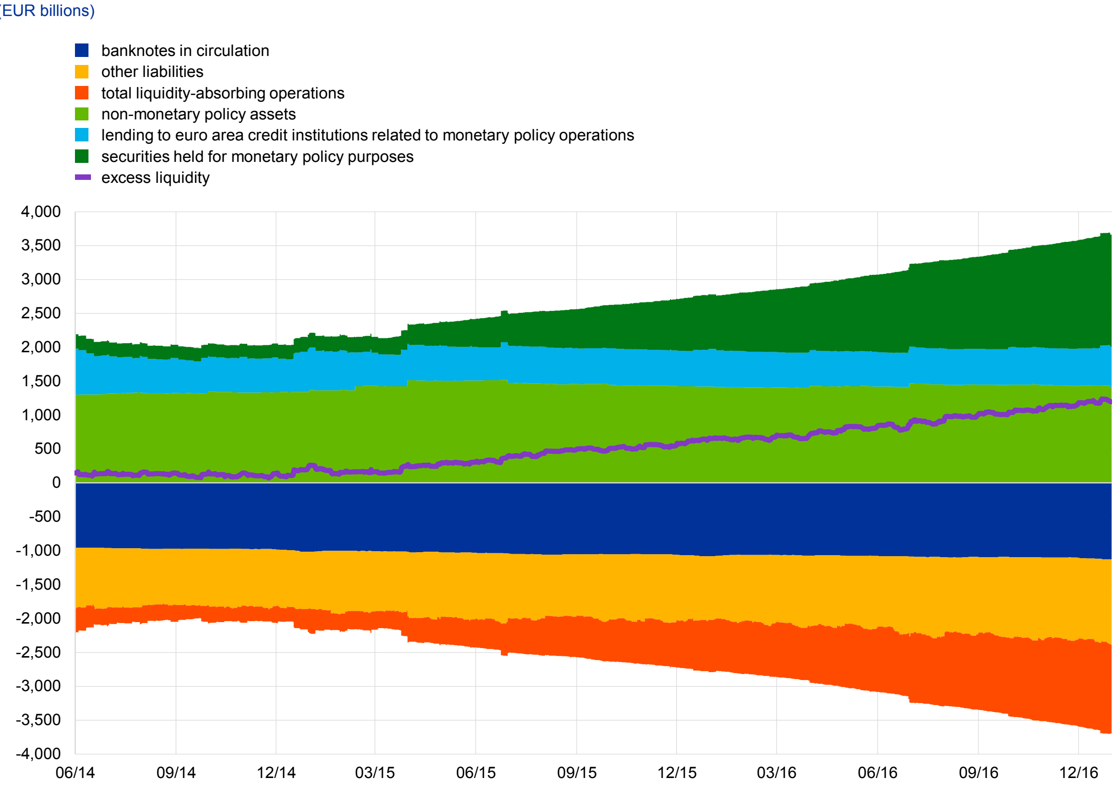
At the beginning of June 2014, before the Governing Council decided on a number of monetary policy measures, monetary policy assets accounted for 40% of total assets on the Eurosystem balance sheet. These included loans to euro area credit institutions, which accounted for 30% of total assets (see the chart below), and monetary policy securities (assets acquired under the Securities Markets Programme (SMP) and the initial covered bond purchase programmes), which represented around 10% of total assets. Other financial assets mainly comprised: (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 NCBs to solvent institutions facing temporary liquidity problems. These other financial assets are subject to internal Eurosystem reporting requirements and restrictions arising from the monetary financing prohibition and the requirement that they should not interfere with monetary policy, which are set out in various legal texts.[57]

On the liabilities side, banknotes in circulation – a core central bank liability – made up around 44% of total liabilities in June 2014. Counterparties' reserve holdings[58] represented 16%, while other liabilities, including capital and revaluation accounts, accounted for 40%.

The monetary policy measures adopted by the Governing Council since June 2014, in particular the expanded asset purchase programme (APP), which started on 9 March 2015, led to both an expansion and a change in the composition of the balance sheet. Monetary policy instruments increased to 61% of the assets side at the end of 2016, while the size of the other financial assets remained relatively stable. On the liabilities side, the main impact was observed in counterparties' reserve holdings, which increased by €1 trillion and represented 36% of the liabilities side at the end of 2016, while banknotes in circulation declined in relative terms to 31%.

Chart

Evolution of the Eurosystem's consolidated balance sheet



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 accounts in excess of reserve requirements and recourse to the deposit facility.

57 In particular, the ECB Guideline on domestic asset and liability management operations by the NCBs (ECB/2014/9) and the Agreement on Net Financial Assets (ANFA).

58 Counterparties' reserve holdings include current account and deposit facility balances at the NCBs and, during the period in which the Eurosystem carried out such operations, fixed-term deposits collected for monetary policy purposes.

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 make up the APP on a weekly basis. In addition, it publishes, on a monthly basis, the breakdown of holdings between primary and secondary market purchases for the third covered bond purchase programme (CBPP3), the asset-backed securities purchase programme (ABSPP) and the corporate sector purchase programme (CSPP) and the breakdown by country issuer, including weighted average maturity, of securities holdings under the public sector purchase programme (PSPP).[59]

At the end of 2016 the PSPP represented the biggest part of the APP, amounting to 82% of total APP securities holdings. Under the PSPP, the allocation of purchases to NCBs' home markets is determined by the ECB's capital key. Within the individual quotas assigned to them, the ECB and the 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 8.3 years at the end of 2016, with some variation across jurisdictions. 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 by the Eurosystem, 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 sovereign bond market. As announced in December 2015, the principal payments on the securities purchased under the APP will be reinvested as they mature, for as long as necessary, thereby keeping APP holdings constant beyond the horizon of the net asset purchases.

Developments in Eurosystem refinancing operations

The outstanding amount of Eurosystem refinancing operations has declined by around €84 billion since the beginning of June 2014. At that time, a large volume of the three-year longer-term refinancing operations was still outstanding and being repaid. Since then, the maturity profile of Eurosystem credit operations has lengthened. The weighted average maturity increased from around half a year in June 2014 to three years at the end of 2016, mainly as a result of the two series of targeted longer-term refinancing operations with an initial maturity of up to four years.

3 The European financial sector: improving resilience in a weak profitability environment

A number of risks to euro area financial stability were identified in 2016 in the ECB's regular assessment of the emerging risks and resilience of the financial system. The overall level of systemic stress in the euro area nevertheless remained contained.

[59] Information on the evolution of the holdings under the APP can be found on the ECB's website at https://www.ecb.europa.eu/mopo/implement/omt/html/index.en.html

Although financial institutions often faced weak profitability, they in many cases improved their resilience, for example by increasing capitalisation levels.

2016 was the second full year in which the ECB performed its macroprudential and microprudential tasks following the establishment of the Single Supervisory Mechanism (SSM), comprising the ECB and the national competent authorities (NCAs) of euro area countries, in November 2014. The ECB also contributed to several important regulatory initiatives and to measures aimed at establishing the third pillar of the banking union, namely a European deposit insurance scheme.

3.1 Risks and vulnerabilities in the euro area financial system

The ECB assesses financial stability developments in the euro area and EU financial systems to identify any vulnerabilities and sources of systemic risk. It carries out this task together with the other central banks of the Eurosystem and the European System of Central Banks. The emergence of possible systemic risks in the financial system is addressed through macroprudential policies.

The ECB presents its financial stability analysis in its semi-annual Financial Stability Review.[60] The ECB also provides analytical support to the European Systemic Risk Board in the area of financial stability analysis.

Bouts of turbulence in global financial markets in 2016 and concerns about euro area banks' profitability prospects

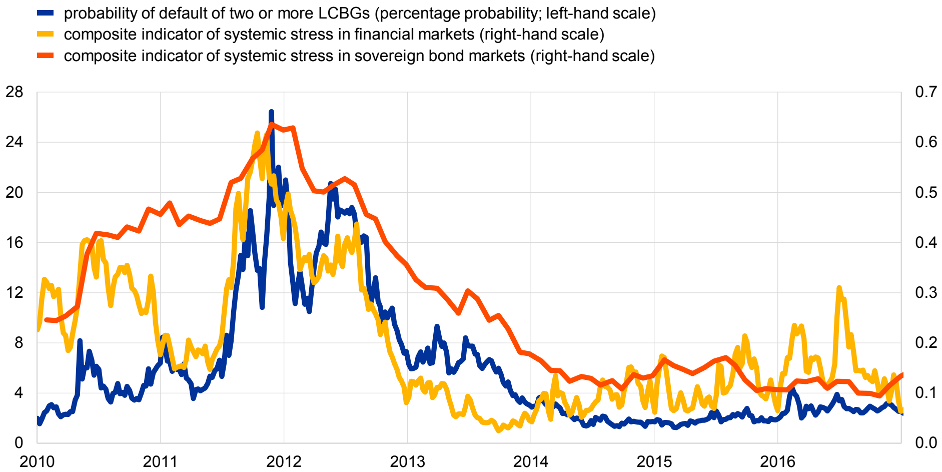
The overall level of systemic stress in the euro area remained contained during 2016 despite short bouts of turbulence in global financial markets. These included the deterioration in market sentiment around the beginning of the year, triggered by volatility in Chinese stock prices and concerns about emerging markets and, later in the year, the political uncertainty that followed the outcomes of the UK referendum on EU membership and the US presidential election. Euro area banks' stock prices experienced periods of high volatility in 2016 which, overall, contributed to an increase in the estimated cost of equity. One of the main reasons for this continued to be market concerns about euro area banks' profitability prospects in an environment of low growth and low interest rates. At the same time, continued accommodative monetary policy and abating market concerns about China dampened the spikes in euro area systemic stress, with standard indicators of bank, sovereign and financial stress remaining at low levels at the end of 2016 (see Chart 30).

[60] See Financial Stability Review, ECB, May 2016 and Financial Stability Review, ECB, November 2016.

Chart 30

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

(Jan. 2011 – Dec. 2016)



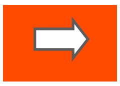
Sources: Bloomberg and ECB calculations.
Note: "Probability of default of two or more LCBGs" refers to the probability of simultaneous defaults in the sample of 15 large and complex banking groups (LCBGs) over a one-year horizon.

In this environment, four key risks to euro area financial stability were identified during 2016 (see Table 2). The possibility of a global risk repricing increased given higher political uncertainty, vulnerabilities in emerging markets and the relatively low pricing of risk in the markets. At the same time, investors continued to increase the levels of risk in their portfolios in the low interest rate environment. Regarding asset prices, corporate bond yields remained at low levels in 2016, while some stock markets showed signs of being overvalued. There were also emerging signs of overvaluation for residential and commercial property in some countries.

Table 2

Key risks to euro area financial stability as identified in the November 2016 Financial Stability Review

pronounced systemic risk
medium-level systemic risk
potential systemic risk

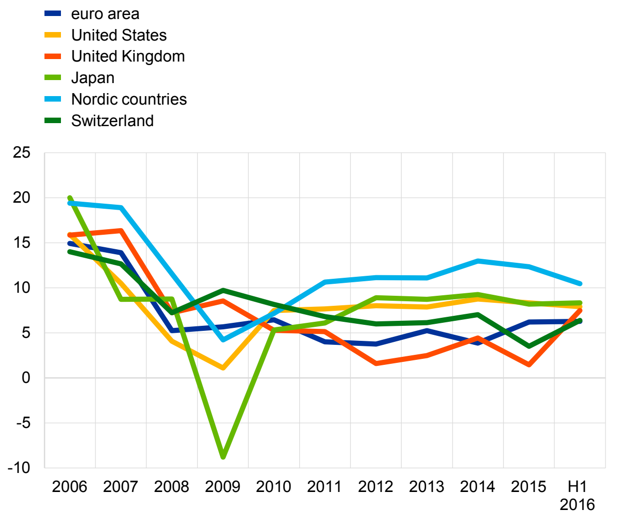
	Current level (colour) and recent change (arrow)*
Global risk repricing leading to financial contagion, triggered by heightened political uncertainty in advanced economies and continued fragilities in emerging markets	
Adverse feedback loop between weak bank profitability and low nominal growth, amid challenges in addressing high levels of non-performing loans in some countries	
Re-emerging sovereign and non-financial private sector debt sustainability concerns in a low nominal growth environment, if political uncertainty leads to stalling reforms at the national and European levels	
Prospective stress in the investment fund sector amplifying liquidity risks and spillovers to the broader financial system	

Source: ECB.
* The colour indicates the cumulated level of risk, which is a combination of the probability of materialisation and an estimate of the likely systemic impact of the identified risk over the next 24 months, based on the judgement of the ECB's staff. The arrows indicate whether the risk has increased since the previous Financial Stability Review.

Other key challenges in 2016 were in many ways a legacy of the banking and sovereign debt crises. The euro area banking sector remained vulnerable, despite its resilience to the market stresses described above. The weak economic growth and the associated low interest rate environment challenged bank profitability prospects in advanced economies (see Chart 31). Despite these challenges, banks have significantly strengthened their capital positions in recent years (as also confirmed by the results of the European Banking Authority's 2016 EU-wide stress test).

Chart 31
Median bank return on equity in major advanced economic regions

(2006-16, annual percentages)



Sources: SNL Financial and ECB calculations.
Note: Data for 2016 refer to the first half of the year.

In some euro area countries, profitability prospects were also hampered by structural overcapacity and the still incomplete adjustment of business models to the low interest rate environment (see Box 7).

Furthermore, the stock of non-performing loans (NPLs) remained high in some euro area countries, which raised concerns about future bank profitability and financial stability (see Box 8). Moreover, progress in reducing the level of NPLs remained slow. At the bank level, the reasons for this included inadequate operational capacity, a lack of experience in managing NPLs, capital constraints and low profitability. In addition, structural factors, such as inefficient insolvency laws, bottlenecks in judicial systems, a lack of out-of-court workout schemes, an underdeveloped market for NPLs, and accounting and tax issues, impeded the swift resolution of NPLs.[61]

Financial stability risks also emanated from outside the banking sector in 2016. First, debt sustainability concerns for the sovereign and non-financial sectors increased. Second, risk-taking in the rapidly growing investment fund sector also increased. Although euro area investment funds remained resilient to market stress, the outflows from some property funds in the United Kingdom following the referendum result demonstrated the vulnerabilities of open-end funds (funds which can issue an unlimited amount of shares, with investors being able to redeem their investment at any time). The risks were aggravated by the lack of a systemic perspective in the regulation of the sector and the ensuing difficulty in preventing the build-up of sector-wide risks.

A structural analysis of the broader euro area financial sector, including insurance corporations and pension funds and shadow banking entities, confirmed that the non-banking financial sector continued to expand in 2016.[62] At the same time, the banking sector continued to move towards more traditional business in 2016. A shift

[61] See Fell, J., Grodzicki, M., Martin, R. and O'Brien, E., "Addressing market failures in the resolution of non-performing loans in the euro area", Financial Stability Review, ECB, November 2016, Special Feature B.

[62] See Report on financial structures, ECB, October 2016.

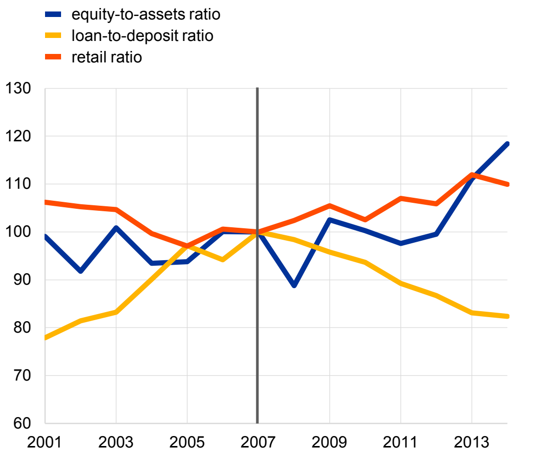
from central bank and wholesale funding towards deposit funding was accompanied by a decrease in leverage.

Box 7
Diversity of banks' business models and adjustment to the low interest rate environment

The incomplete adjustment of bank business models to the low interest rate environment is a key factor behind the low bank profitability in the euro area. Before the financial crisis, bank profits were boosted by high leverage, cheap wholesale funding and risk-taking in real estate lending or securitisation. The crisis demonstrated that some of these strategies were not sustainable. The crisis-induced changes in banks' and investors' willingness to take on risk and in regulation have prompted a reshaping of bank business models. Banks have reduced the size of their balance sheets, built up their capital base and scaled back riskier activities in favour of core business. In the euro area, this has on aggregate resulted in a shift from investment banking and wholesale activities towards more traditional retail business (see Chart A).[63]

Chart A
Changes in EU significant banking groups' key business model characteristics after the crisis

(2001-14; index: 2007 = 100)



Sources: Bloomberg, SNL Financial and ECB calculations.
Notes: The index is based on the median value for each indicator. The retail ratio is calculated as the ratio of customer deposits plus (net) customer loans to total assets.

It is often suggested that a further adjustment of business models towards increased fee and commission (F&C) income could support bank profitability in a low growth and interest rate environment. However, a closer investigation reveals that the success of such a strategy is likely to depend on a bank's specific business model and, consequently, the type of F&C income it is equipped to generate.[64]

Bank business models can be classified according to the weight of various activities in bank balance sheets. ECB analysis suggests that bank size, non-domestic exposures and funding profiles are key determinants of business models (see Chart B)[65]. It also indicates that categories such as custodian banks, retail lenders, universal banks, specialised or sectoral lenders and large international banks, such as global systemically important banks (G-SIBs), are useful for gauging the impact of diverse factors on the banking sector (see Chart C) or establishing a peer group comparison by business model in banking supervision.

[63] See Kok, C., Moré, C. and Petrescu, M., "Recent trends in euro area banks' business models and implications for banking sector stability", Financial Stability Review, ECB, May 2016, Special Feature C.

[64] See Kok, C., Mirza, H., Moré, C. and Pancaro, C., "Adapting bank business models: financial stability implications of greater reliance on fee and commission income", Financial Stability Review, ECB, November 2016, Special Feature C.

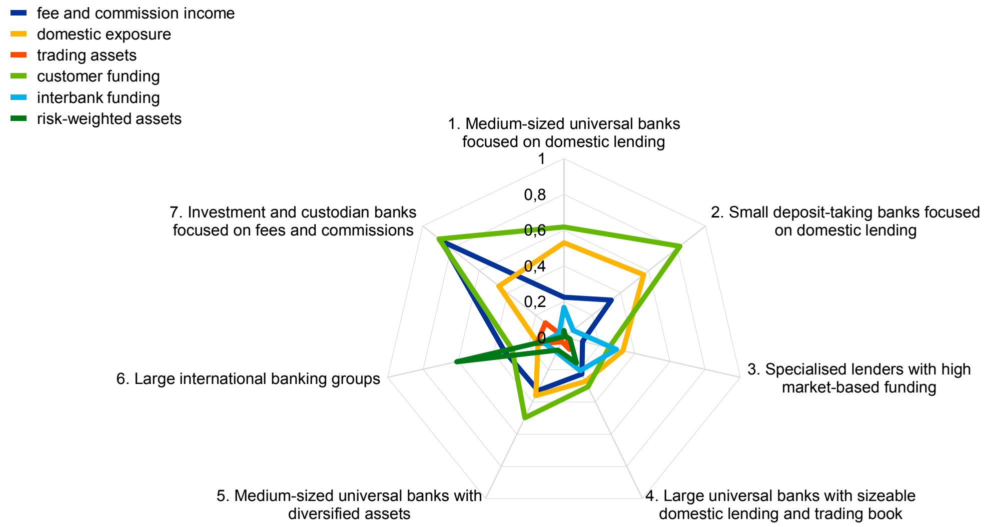
[65] See Franch, F. and Żochowski, D., "A statistical approach to classify euro area banks according to business model characteristics", Financial Stability Review, ECB, May 2016, Special Feature C, Box 2.

In relation to the interplay between F&C income and business models, several points can be made on the basis of recent analysis by the ECB. First, custodian banks and asset managers are the most F&C income-oriented, owing to the high concentration of the related activities that characterise their business model (see Chart B). Whereas universal and retail banks tend to receive around one-quarter of their income from fees and commissions, such income matters the least for specialised lenders.[66] Indeed, such lenders may be less well-equipped to markedly increase their F&C income owing to the specific business model.

Chart B

Balance sheet structure of different business models

(2014; ratios and percentage shares of total assets and liabilities or total operating income)



Sources: Bankscope, Bloomberg, SNL Financial and ECB calculations.
Notes: Data are taken from the balance sheets of 113 significant institutions supervised by the ECB. The chart shows the medians of variables used for the identification of clusters for each of the seven clusters identified for 2014.

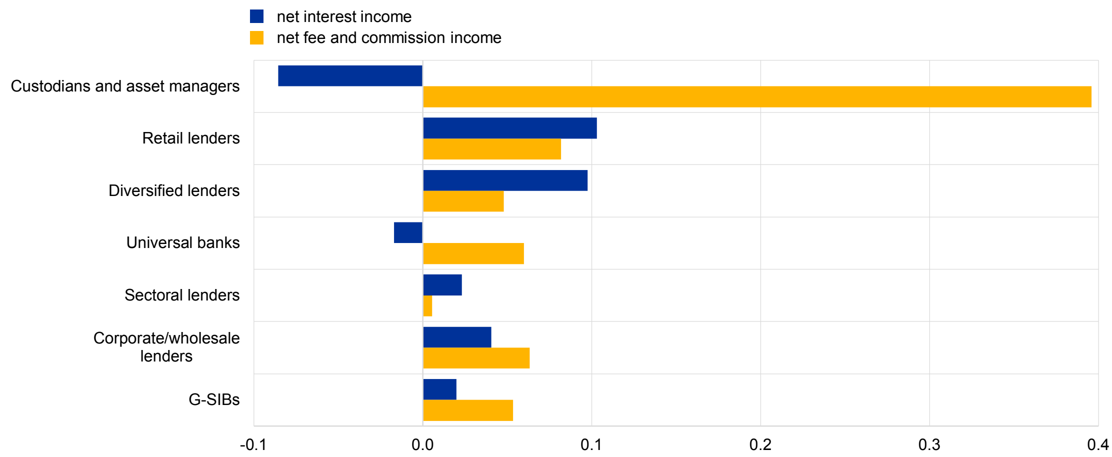
Second, since 2012 F&C income has grown for many banks (see Chart C). For custodians and asset managers as well as universal banks, increasing F&C income has compensated for the lower net interest income (NII) during the observation period. Banks with other business models recorded both positive NII and F&C income growth, suggesting that F&C income generation is likely to be closely linked to their general business activity. Whether NII and F&C income can be considered complements or substitutes thus depends on the bank's business model and the source of F&C income generated.

66 See also Chart C.2 in Kok, C., Mirza, H., Moré, C. and Pancaro, C., "Adapting bank business models: financial stability implications of greater reliance on fee and commission income", Financial Stability Review, ECB, November 2016, Special Feature C.

Chart C

Changes in net interest income and net fee and commission income for significant institutions broken down by business model

(percentage point change in net interest income over total assets and net fee and commission income over total assets over the period 2012-15)



Sources: ECB and SNL Financial.
Notes: The sample covers 94 significant institutions supervised by the ECB. "Universal banks" also include G-SIBs that are universal banks, while "G-SIBs" exclude those banks.

Third, looking at the financial stability aspects of these developments reveals that the resilience of F&C income to adverse macroeconomic developments differs across business models.[67] The various ways in which F&C income can be generated imply that it is potentially a more volatile source of income for corporate/wholesale, sectoral and retail lenders and universal banks than for diversified lenders and G-SIBs. Thus, while F&C income growth has been supportive for some of those business model categories in recent years in diversifying income sources, it could decline significantly under more adverse circumstances.

Finally, while some banks migrated across different business models between 2007 and 2014, most of them remained in the same group.[68] Bank business models thus tend to be relatively "sticky" and cannot be seamlessly adapted to a changing environment or in anticipation of stress. A particular implication for financial stability can arise if some clusters of banks are more prone to systemic stress than others. This, in turn, could lead to a concentration of systemic risk.

3.2 The ECB's macroprudential function

The responsibility for decisions on macroprudential measures in the euro area is shared between national authorities and the ECB. National authorities retain the power to implement macroprudential measures, but the ECB has the power to top up the measures taken by national authorities for those macroprudential instruments assigned to it through EU legislation. The asymmetric nature of the powers reflects

67 See footnote 66.

68 See footnote 66.

the role that the ECB is required to play to overcome a potential inaction bias at national level.

In 2016 the ECB and national authorities continued to engage in broad discussions, at both the technical and the policy level, on the use of macroprudential instruments. These discussions served to assess the adequacy of the macroprudential stance across all the countries covered by European banking supervision.

Macroprudential policy during 2016

During 2016 the ECB strengthened its coordination role in macroprudential policy and its external communication on macroprudential issues to improve transparency and to underscore the important role that macroprudential policy plays. The Governing Council released its first macroprudential statement following discussions at the Macroprudential Forum, which is composed of the members of the Governing Council and the Supervisory Board of the ECB. In addition, the first two issues of the ECB's Macroprudential Bulletin were released in March and October. The aim of the Bulletin is to enhance the transparency of macroprudential policy, to provide information about ongoing research on macroprudential topics and to illustrate how it is applied in dedicated policy work at the ECB. The first issue of the Bulletin also discussed the ECB's macroprudential policy framework and how it relates to other macroprudential fora and processes in the EU.[69]

The ECB also fulfilled its legal mandate to assess macroprudential decisions of national authorities in the countries covered by European banking supervision. It received notifications of over a hundred such decisions, most of which were related to the setting of countercyclical capital buffers and to 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 risk weight floors 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. The Governing Council agreed with the countercyclical capital buffer decisions taken by the national authorities. In particular, the significant build-up of cyclical systemic risks in Slovakia led to the decision to set the countercyclical capital buffer in Slovakia at 0.5% as of 1 August 2017.

In 2016 the ECB, national authorities and the Financial Stability Board (FSB), in consultation with the Basel Committee on Banking Supervision (BCBS), updated the assessment of global systemically important banks (G-SIBs) in euro area countries. The assessment resulted in eight banks in France, Germany, Italy, the Netherlands and Spain being allocated to the internationally agreed G-SIB buckets 1 and 3, which

[69] See Macroprudential Bulletin, Issue 1, ECB, 2016.

entail capital buffer rates of 1.0% and 2.0% respectively.[70] These new buffer rates are applicable from 1 January 2018 and subject to a phase-in period. The lists of G-SIBs and other systemically important institutions (O-SIIs) and their buffer rates are reviewed on an annual basis.

National authorities also decided on the capital buffers for the 110 O-SIIs. The decided buffer rates are in line with the newly introduced ECB methodology for assessing O-SII buffers.[71] All of the identified O-SIIs will have a strictly positive capital buffer rate as of 2019.

Macroprudential stress testing

As part of its macroprudential function, and in addition to actively participating in the EU-wide supervisory stress test in 2016, the ECB carried out a macroprudential extension of the stress-test exercise.[72] Whereas the supervisory stress test focuses on estimating the direct impact on individual banks' solvency, the macroprudential extension aimed to quantify the potential second-round macroeconomic effects of the stress materialisation. The study was based on a conceptual framework developed by ECB staff which will be used to support the calibration of macroprudential policy measures.[73]

The first step was to estimate the impact of changes in the stock of aggregate bank loans on bank solvency, thus removing part of the inconsistency introduced by the static balance sheet assumption used in the EU-wide stress-test methodology. In an additional step, second-round effects on macroeconomic variables were estimated. These relate to banks' potential adjustments when their capital ratio falls below a predetermined capital target in the adverse scenario. Their magnitude depends on the adjustment strategy adopted: the greater the share of equity issuance in the adjustment, the smaller the second-round macroeconomic impact.

Beyond the endogenous response of the banking sector to stress, the macroprudential extension considered two additional channels through which second-round effects of distress can further reduce bank solvency, namely bank interconnectedness and cross-sector spillovers through equity holdings. The

70 The identified G-SIBs (with fully phased-in buffer requirements as of 2019 shown in brackets) are BNP Paribas (2.0%), BPCE Group (1.0%), Crédit Agricole Group (1.0%), Deutsche Bank (2.0%), ING Bank (1.0%), Banco Santander (1.0%), Société Générale (1.0%) and UniCredit Group (1.0%). The requirements have been determined following the July 2013 BCBS methodology.

71 The ECB's O-SII methodology allocates banks to one of four O-SII buckets based on the banks' systemic relevance score. The score is computed in accordance with the European Banking Authority Guidelines (EBA/GL/2014/10) for the assessment of O-SIIs, which set out the relevant indicators for measuring the systemic importance of individual institutions. See also the annex of the press release of 15 December 2016.

72 For details, see Macroprudential Bulletin, Issue 2, ECB, 2016.

73 See Henry, J. and Kok, C. (eds.), "A macro stress testing framework for assessing systemic risks in the banking sector", *Occasional Paper Series*, No 152, ECB, October 2013 and Constâncio, V., "The role of stress testing in supervision and macroprudential policy", speech at the London School of Economics conference on stress testing and macroprudential regulation, 29 October 2015. It is a top-down modular analytical framework, composed of stand-alone models and tools that can be combined to provide a broad analysis of the impact of macro-financial stress.

exercise concluded that direct contagion through interbank money markets should be limited, while cross-sector spillovers would mostly affect non-bank financial institutions, in particular investment funds and pension funds.

Cooperation with the European Systemic Risk Board

The ECB continued to provide analytical, statistical, logistical and administrative support to the ESRB Secretariat, which is in charge of the day-to-day operations of the ESRB. The Financial Stability Committee of the ECB prepared jointly with the Advisory Scientific Committee and the Advisory Technical Committee of the ESRB a report on the macroprudential policy issues arising from low interest rates and structural changes in the EU financial system.[74] The report explores potential risks in a low interest rate environment across financial sectors and highlights possible macroprudential policy responses. It covers not only banks but also other types of financial institution, financial markets and market infrastructure, overarching issues across the financial system, and interactions with the broader economy.

The ECB also supported the ESRB in its publication of eight country-specific warnings on residential real estate vulnerabilities on 28 November 2016 by analysing indicators of imbalances and developing overvaluation models. The highlighted vulnerabilities related to rising household indebtedness and households' ability to repay their mortgage debt, as well as to the valuation or price dynamics of residential real estate. Notwithstanding this analysis, real estate data gaps need to be closed further, as reflected in an ESRB recommendation providing harmonised definitions necessary to conduct data collections related to both the residential and the commercial real estate sectors.

3.3 The ECB's microprudential function

2016 was the second full operational year for ECB Banking Supervision. Throughout the year, activities in this area continued to contribute to a stable European banking sector and a level playing field for all banks in the euro area.

The ECB refined the Supervisory Review and Evaluation Process (SREP) for those banking groups that it supervises directly, publishing high-level expectations on banks' internal capital and liquidity adequacy assessment processes as well as a recommendation on banks' dividend distribution policies. Moreover, it took into account clarifications from the European Commission and the European Banking Authority (EBA). Supervisory capital add-ons now consist of two components: the requirement which banks have to fulfil and maintain at all times, and the guidance the breach of which would not automatically lead to supervisory action but would trigger a case-by-case assessment and potentially bank-specific measures. In the 2016 SREP, the guidance reflected the results of the stress test conducted by the

[74] See the ESRB press release of 28 November 2016.

EBA. Overall capital demand remained broadly stable, unaffected by the changed methodology.

Less significant institutions (LSIs) are supervised by the national competent authorities (NCAs) under the oversight of the ECB. The ECB follows a proportionate, risk-based approach to the oversight of LSIs, complemented with sectoral monitoring to capture the interconnections among LSIs. The ECB and the NCAs continued to develop joint standards for supervising LSIs, for example establishing a joint monitoring of institutional protection schemes[75] which cover both significant institutions (SIs) and LSIs.

European banking supervision further harmonised the exercise of options and discretions provided in European prudential legislation. This is an important step towards ensuring consistent supervision and a level playing field for SIs and LSIs. Still, the regulatory framework in the euro area remains fragmented in some cases. Given the goal of a European banking union, further harmonisation is necessary.

Against the backdrop of low profitability in the European banking sector, the ECB examined banks' business models and profitability drivers and launched a thematic review. The ECB also devised guidance for banks on how to tackle non-performing loans, which remain high in some parts of the euro area. In June the ECB published a supervisory statement on banks' governance and risk appetite, outlining supervisory expectations. It also launched a targeted review of banks' internal models, conducted a stocktake of IT risks and prepared guidance on leveraged transactions.

ECB Banking Supervision also increased its participation in global fora by becoming a member of the plenary of the Financial Stability Board.

More detailed information on ECB Banking Supervision can be found in the ECB Annual Report on supervisory activities 2016.

3.4 The ECB's contributions to regulatory initiatives

The ECB contributed to the development of the regulatory framework at the international and European levels in 2016. The primary objective of the ECB was to ensure that the regulatory framework appropriately takes into account both macro- and microprudential considerations and to create a framework that supports the stability of the individual institutions and the financial system as a whole. The key regulatory issues for the ECB in 2016 included: (i) the finalisation of the international capital and liquidity standards for banks (Basel III); (ii) the revision of the micro- and macroprudential regulatory framework in the European Union (the Capital Requirements Regulation and Directive – CRR/CRD IV); (iii) ending the "too big to fail" problem; and (iv) creating a capital markets union (CMU) for the European Union and strengthening the regulatory framework beyond the banking sector. In

75 A contractual or statutory liability arrangement which protects its member institutions and in particular ensures that they have the liquidity and solvency needed to avoid bankruptcy where necessary.

addition, the ECB contributed to the continued discussions in 2016 on establishing the third pillar of the banking union, namely a European deposit insurance scheme.

3.4.1 The finalisation of the international capital and liquidity standards for banks

In 2016 the ECB contributed to a number of initiatives aimed at completing the regulatory response to the financial crisis, which also entailed a comprehensive overhaul of the prudential framework for banks over the last eight years by the Basel Committee on Banking Supervision (BCBS). Basel III is a core element of the post-crisis reforms which aims to ensure adequate, internationally comparable standards and give banks a degree of regulatory certainty to support the adaptation of business models to the current environment. In this context, the ECB contributed to the comprehensive review of the use of internal models in the Basel capital framework, an exercise aimed at reducing excessive variability of risk-weighted assets, which form the basis of capital requirements. Moreover, the ECB supported the BCBS and the European Banking Authority (EBA) in their work on finalising the leverage ratio as a backstop measure to the risk-based capital requirements, in particular with regard to the calibration of an adequate minimum level, as well as a surcharge for global systemically important banks (G-SIBs) based on an internationally harmonised definition. In January 2017 the Group of Governors and Heads of Supervision (GHOS), the oversight body of the BCBS, welcomed the progress made towards completing the post-crisis regulatory reforms. It noted, however, that more time was needed to finalise the reform proposals before the GHOS could review them. This work is expected to be completed in the near future.

3.4.2 The revision of the micro- and macroprudential regulatory framework in the European Union

The implementation of the agreed international standards in EU law, notably via the revision of the CRR/CRD IV, was one of the main regulatory challenges in 2016, and this will continue to be the case in the years ahead. The review of the CRR/CRD IV will introduce the leverage ratio into the EU framework, as an additional capital-based measure complementing the risk-based capital framework, as well as the net stable funding ratio, which is a long-term liquidity requirement complementing the existing short-term requirements set by the liquidity coverage ratio. Furthermore, by setting proper incentives for banks and their employees, the new framework will also contribute to a more stable provision of financial services to the real economy. This review, which is expected to be completed in 2017, represents an important phase of regulatory reform in the European Union.

A further key regulatory initiative to which the ECB made a substantial contribution is the review of the EU macroprudential policy framework which started in 2016. The ECB is supportive of a comprehensive review of the macroprudential policy framework with the aim of enhancing its effectiveness, and in 2016 an ECB contribution to the European Commission's consultation on the review was published.[76] In this regard, it is important to reflect the new institutional landscape, notably the establishment of the Single Supervisory Mechanism (SSM), in the macroprudential policy framework, as well as to revise and clarify the specific powers of micro- and macroprudential authorities, streamline the coordination arrangements between authorities, broaden the macroprudential policy tools and simplify their activation mechanism so as to ensure that authorities can address systemic risks in a timely and effective manner. This requires a thorough revision of the current legislation because the macroprudential framework set out in the CRR/CRD IV as well as in the ESRB Regulation[77] predates the establishment of the banking union and in particular of the SSM.

3.4.3 Ending the "too big to fail" problem

The revision of the recovery and resolution framework was another key regulatory initiative to which the ECB contributed in 2016. The objective of the revision is to ensure that banks have sufficient and credible loss-absorbing capacity and that the costs of resolution are borne by banks' shareholders and creditors, rather than taxpayers. A new concept of total loss-absorbing capacity (TLAC) has already been agreed for G-SIBs at the international level. In parallel, the EU framework introduced a minimum requirement for own funds and eligible liabilities (MREL), which is applicable to all credit institutions in the European Union, irrespective of their size. Both TLAC and MREL requirements improve the resolvability of banks and thus safeguard financial stability and avoid both moral hazard and the overburdening of public finances. However, the two concepts deviate in terms of some key features, which may create inconsistencies in the regulatory framework and may also distort competition. In this regard, the ongoing revision of the Bank Recovery and Resolution Directive and other related pieces of EU law provides an opportunity to implement TLAC in Europe at least for G-SIBs and to further harmonise the application of MREL across EU Member States, thus ensuring that globally active institutions face a consistent set of rules across jurisdictions.

3.4.4 Financial regulation beyond banking

It is important that an appropriate regulatory framework is also in place for non-bank financial institutions. To this end, the ECB contributed to the discussion on the completion of the Single Market for financial services and capital, which entails further levelling the playing field between the banking and non-banking sectors and making real progress on the CMU Action Plan. Greater financial risk-sharing, diversification and heightened competition between bank and non-bank entities and

76 See "ECB contribution to the European Commission's consultation on the review of the EU macroprudential policy framework", ECB, December 2016.

77 Regulation (EU) No 1092/2010 of the European Parliament and of the Council of 24 November 2010 on European Union macro-prudential oversight of the financial system and establishing a European Systemic Risk Board.

across borders bring economic benefits. Indeed, capital markets can be an important complement to banks when it comes to providing finance to the economy. At the same time, such developments inevitably have financial stability implications and may create new risks.

The ECB in 2016 continued to support the steps to accelerate CMU. A fully fledged CMU needs to tackle differences in the national and European legislative frameworks which pose an obstacle to cross-border activities, including insolvency law and taxation. It is also important to establish the legal basis for macroprudential tools that can be used beyond the banking sector.

3.4.5 A European deposit insurance scheme

The ECB contributed to the continued discussions in 2016 on establishing a European deposit insurance scheme and supports the roadmap towards completing banking union, including risk-sharing (comprising the scheme itself plus a backstop to the Single Resolution Fund) and related risk-reduction measures.

In the ECB's view, it is important that such a scheme is put in place as soon as possible and that progress continues to be made on the risk-reduction agenda. A European deposit insurance scheme is the third and final pillar of banking union and its establishment would further enhance and safeguard financial stability. Deposit insurance is both an ex ante tool to enhance confidence and prevent bank runs and an ex post tool to protect against the adverse consequences of individual bank failures. In parallel, progress should continue on implementing remaining reforms which will contribute to reducing risks in the banking system.

Box 8

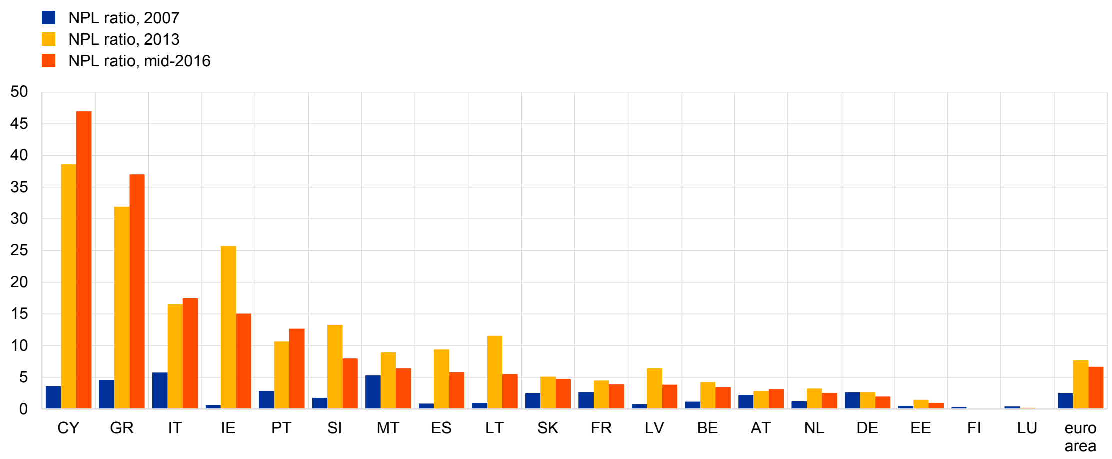
Non-performing loans in the euro area

Euro area countries experienced a significant deterioration in bank asset quality after the start of the financial crisis. One indicator of asset quality is the ratio of non-performing loans (NPLs), i.e. loans that are in default or close to default, to a bank's overall loan portfolio. After reaching a low of 2.5% at end-2007, the NPL ratio for the euro area as a whole peaked at 7.7% at end-2013, but declined to 6.7% by mid-2016 as a result of concerted action in a number of countries (notably Ireland, Slovenia and Spain) and the somewhat improved macroeconomic environment (see Chart A). However, the NPL ratio is persistently high in some countries, for example in Cyprus (47.0%), Greece (37.0%), Italy (17.5%) and Portugal (12.7%). The main driver of worsening bank asset quality in the euro area was the corporate sector, in particular the small and medium-sized enterprise (SME) and commercial real estate sectors.

Chart A

Euro area NPL ratio dynamics

(percentages)



Source: IMF (Financial Soundness Indicators).
Notes: Data for mid-2016 for Germany and Italy refer to end-2015. IMF instead of ECB data are used as they allow for a historical comparison of NPL levels.

In the years prior to the financial crisis, a number of countries recorded high credit and private sector debt growth, often accompanied by rising property prices, which made the effects of the crisis more pronounced. However, in addition to these cyclical components, high NPL ratios and their persistence reflect a variety of structural factors across countries. High corporate sector debt, low productivity and weak external competitiveness are impeding corporate investment and hindering business expansion, while weak government finances are increasing the country risk premium. At the same time, slow labour market reforms (addressing segmentation and low flexibility) and subdued real estate (collateral) markets in some countries are hampering the recovery of NPLs in the retail segment. Finally, deficiencies in the legal framework, most notably inefficient foreclosure and insolvency frameworks, together with limitations in the sharing of data between creditors and the tax treatment of write-offs, are impeding the efficiency of NPL recovery.

High levels of NPLs put pressure on banks’ earnings as they result in lower interest income and higher provisioning costs. At the same time, they increase banks’ capital needs and consume banks’ administrative resources. NPLs also adversely affect banks’ funding costs as uncertainty about asset quality worsens a bank’s risk profile and leads to higher funding costs. This can create an adverse loop as banks cannot deal with NPLs if they cannot raise sufficient capital. The low profitability and weak capitalisation of NPL-burdened banks limits their options, as extending new loans requires further capital. Since some euro area banks are active outside the euro area and, in some cases, play an important role in foreign banking sectors, the problems they confront domestically can also have a negative impact on other banking sectors and vice versa.

Weaknesses in bank balance sheets may spill over to the economy at large when banks with high NPLs have lower loan growth and charge higher interest rates on loans; reducing NPLs in the euro area would thus improve economic growth.[78] Given the expected modest economic recovery for the euro area in 2017 and 2018[79], together with the still high level of private and public sector debt, NPLs are unlikely to significantly decrease in the medium term unless additional measures are taken. NPL reduction requires a comprehensive strategy focused on the structural drivers of NPLs.[80] Looking at historical data, countries that simultaneously implemented on- and off-balance-sheet policy actions in a timely manner and opted for actions specifically targeting the portfolio segments considered to be the most important drivers of NPLs recorded a notable decrease in NPL ratios (e.g. Ireland, Slovenia and Spain, where NPL ratios declined by 16.7, 5.3 and 3.3 percentage points respectively from 2013 to mid-2016).

ECB Banking Supervision is putting significant efforts into helping NPL resolution. Starting with the 2014 comprehensive assessment, the ECB has continued to support NPL resolution activities through constant supervisory dialogue with the relevant banks. In order to address this lingering challenge in a determined and forceful manner, ECB Banking Supervision (i) undertook a stocktake of supervisory, legal and judicial and extra-judicial practices in a number of euro area countries and (ii) developed draft NPL guidance[81], which was published in September 2016 for consultation. The final guidance is expected to be published in the course of spring 2017. Joint Supervisory Teams have started to actively engage with supervised banks regarding the implementation of this guidance, which expects banks with high levels of NPLs to set challenging and ambitious targets to address the NPL stock. The guidance furthermore fosters more consistent forbearance, NPL recognition and provisioning practices and disclosures, with the aim of increasing market confidence and ensuring a level playing field. However, the NPL resolution process cannot be tackled by the supervisor and banks alone. Policy actions need to be implemented in a speedy manner to address structural obstacles that prevent banks from resolving NPLs and restructuring distressed debt. Such actions could aim to improve the efficiency of judicial systems, increase access to collateral, create faster out-of-court procedures and remove fiscal disincentives. Moreover, it is necessary to develop markets for distressed assets and to facilitate sales of troubled loans to non-bank investors. In this context, efforts to foster the development of an NPL servicing industry, to improve data quality and access and to remove tax and legal impediments to debt restructuring will also be required.

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78 The quantification by Balgova, M., Nies, M. and Plekhanov, A. in "The economic impact of reducing non-performing loans", Working Paper No 193, European Bank for Reconstruction and Development, October 2016, suggests that the potential benefit of reducing NPLs could be GDP growth as much as two percentage points higher per year. This refers to a global sample of 100 countries. However, similar results for the euro area can be found in Global Financial Stability Report, International Monetary Fund, October 2016; Euro area policies: selected issues – Country Report No 15/205, International Monetary Fund, July 2015; and Unlocking lending in Europe, European Investment Bank, October 2014, Box 5.

79 See September 2016 ECB staff macroeconomic projections for the euro area, ECB, 2016.

80 See Fell, J., Grodzicki, M., Martin, R. and O'Brien, E., "Addressing market failures in the resolution of non-performing loans in the euro area", Financial Stability Review, ECB, November 2016, Special Feature B, for a more detailed description of the structural drivers of NPLs.

81 See Draft guidance to banks on non-performing loans, ECB Banking Supervision, September 2016.

Other tasks and activities

1 Market infrastructure and payments

The financial sector, including its underlying market infrastructure, needs to adjust to the rapid technological change and innovation which is currently having an impact on all aspects of our lives. While digitalisation, globalisation and greater interconnectivity have opened up new opportunities for individuals and businesses to obtain information, transact business and communicate, the increase in users and data on digital platforms, in cloud computing and across networks has also increased the number of potential routes for cyber attacks. Cybercrime poses threats not only to individual market participants but also to the overall operational network, and cyber resilience was therefore an important focus point for the ECB and the Eurosystem in 2016 in the area of market infrastructure and payments.

The Eurosystem has also been looking at the future strategic development of its market infrastructure. It is exploring how liquidity management within the fields of payments, securities settlement and Eurosystem collateral management can be made more efficient. Working closely with market participants, it is studying how new user needs can be met and how technological innovation can be used to stay ahead of evolving risks, such as cyber threats.

In shaping the future of its market infrastructure, safety and efficiency remain the top priorities for the Eurosystem. The smooth operation of its market infrastructure is crucial for maintaining confidence in the euro and supporting monetary policy operations. It also plays a central role in ensuring the stability of the European financial system and in boosting economic activity.

1.1 Consolidation of TARGET2 and T2S

TARGET2, the Eurosystem's gross settlement system for euro payment transactions, processed a daily average value of €1.7 trillion in 2016. To give an idea of the magnitude of this figure, TARGET2 processes a volume comparable to the euro area's annual GDP every six days.

TARGET2-Securities (T2S) went live in June 2015, bringing more integration into the European securities settlement market infrastructure, which was highly fragmented. The platform is an essential cornerstone of the European Commission's project to build a capital markets union and has brought about an extensive post-trade harmonisation agenda.

Two successful migration waves in March and September 2016 increased the number of central securities depositories (CSDs) on the T2S platform from 5 to 12[82] and increased the processing volume to about 50% of the total volume expected by the time the remaining nine participating CSDs are connected to the platform. It is anticipated that T2S will process an average of more than 550,000 transactions per day once full migration is completed in 2017.

Functionally, TARGET2 and T2S revolve around efficient liquidity management within the fields of payment transfers, securities settlement and collateral management. However, as the two systems were developed at different points in time, they operate on separate platforms and use different technical solutions and environments. It is therefore logical to seek synergies between the two systems. Modernising TARGET2, leveraging the possibilities already available in T2S, and consolidating the technical and functional components of TARGET2 and T2S services are the primary objectives. In addition, consolidation provides an opportunity to further improve cyber resilience, to enhance the services offered to users and to establish a single access channel. Investigative work in this area will run throughout 2017.

1.2 Settlement services to support instant payments

For the Eurosystem, the biggest challenge posed by digitalisation in the payments industry is to ensure that the introduction of innovative payment products and services developed by the market does not reintroduce fragmentation into the European market.

In 2016 instant payments, i.e. payments with immediate availability of funds to the recipient, were probably the most talked about topic in the retail payments industry. The instant payment scheme launched in November 2016 enables the roll-out of instant payment solutions to end users. By November 2017 the European financial market infrastructure aims to be ready to process instant payments on a pan-European scale.

The Eurosystem will support settlement between retail payment infrastructures offering clearing services for pan-European instant payments in euro by delivering enhanced TARGET2 functionality for automated clearing houses (ACHs) and by fostering dialogue and interoperability between ACHs.

Furthermore, the Eurosystem, in the context of its investigative work on the future of its market infrastructure, is analysing the possibility of developing a real-time TARGET instant payment settlement service with settlement in central bank money available at any time all year round.

82 In June 2015 four CSDs from Greece, Malta, Romania and Switzerland were connected to the platform. The Italian CSD was connected in August 2015. In March and September 2016 these were joined by a further seven CSDs, from Portugal, Belgium (two CSDs), France, the Netherlands, Luxembourg and Denmark.

1.3 The Eurosystem's future market infrastructure and distributed ledger technology

In the context of its strategic reflections on the future of the Eurosystem market infrastructure, the ECB has been considering a range of distributed ledger technology (DLT) models that are currently under development. To gain more insight into the possible impact of DLT on market infrastructure, see the special feature on the ECB's website.

1.4 A safe financial market infrastructure

The Eurosystem promotes the safety and efficiency of financial market infrastructures (FMIs) through its oversight role and, where necessary, fosters change. In July 2016 the ECB published a revised version of the Eurosystem oversight policy framework to reflect regulatory and other developments over recent years which have influenced the Eurosystem oversight function. The ECB is the lead overseer of three systemically important payment systems (SIPS) – TARGET2, EURO1 and STEP2. During 2016, together with euro area national central banks (NCBs), the ECB concluded a comprehensive assessment of these SIPS against the oversight requirements of the SIPS Regulation[83]. The ECB also expanded its oversight activities in relation to T2S in line with the increased migration of CSDs to the single settlement platform over the course of 2016.

Furthermore, the ECB published a report on a crisis communication exercise for FMIs operating in the euro area that was organised by Eurosystem overseers. The market-wide exercise was designed to evaluate the preparedness of the Eurosystem to effectively carry out its operational and oversight responsibilities during crisis events and to provide assurance on the effectiveness of the various stakeholders' crisis management procedures for events with cross-border impacts. More generally, the ECB is working together with other central banks, regulators and authorities to strengthen the resilience of the financial sector as a whole against cyber attacks and contributed to international guidance on cyber resilience[84] which was issued in 2016.

With regard to central counterparties (CCPs), the ECB has contributed to the international efforts under the aegis of the relevant G20 standard-setting bodies to complete the reform of global derivatives markets.

The ECB continued to be involved in global and EU cooperative arrangements for certain FMIs from a central bank of issue perspective. In this context, the ECB contributed to the ongoing work of the supervisory colleges for CCPs established under the European Market Infrastructure Regulation (EMIR). From the same perspective, the ECB, together with euro area NCBs, carried out preparatory work on the future authorisation of CSDs under the CSD Regulation.

83 Regulation of the European Central Bank (EU) No 795/2014 of 3 July 2014 on oversight requirements for systemically important payment systems (ECB/2014/28).

84 Guidance on cyber resilience for financial market infrastructures, Committee on Payments and Market Infrastructures-International Organization of Securities Commissions, June 2016.

2 Financial services provided to other institutions

2.1 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 facility (MTFA)[85] and the European Financial Stabilisation Mechanism (EFSM)[86]. In 2016 the ECB processed interest payments in relation to the loans under the MTFA. As at 31 December 2016 the total outstanding amount under this facility was €4.2 billion. In 2016 the ECB also processed various payments and interest payments in relation to the loans under the EFSM. As at 31 December 2016 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)[87] and the European Stability Mechanism (ESM)[88]. In 2016 the ECB 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.[89] As at 31 December 2016 the total outstanding amount under this agreement was €52.9 billion.

2.2 Eurosystem Reserve Management Services

In 2016 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. Individual Eurosystem NCBs ("the Eurosystem service providers") offer the complete set of 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

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

86 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.

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

88 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).

89 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.

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 286 in 2016, compared with 285 in 2015. With regard to the services themselves, in the course of 2016 the total aggregated holdings (which include cash assets and securities holdings) managed within the ERMS framework increased by approximately 8% compared with the end of 2015.

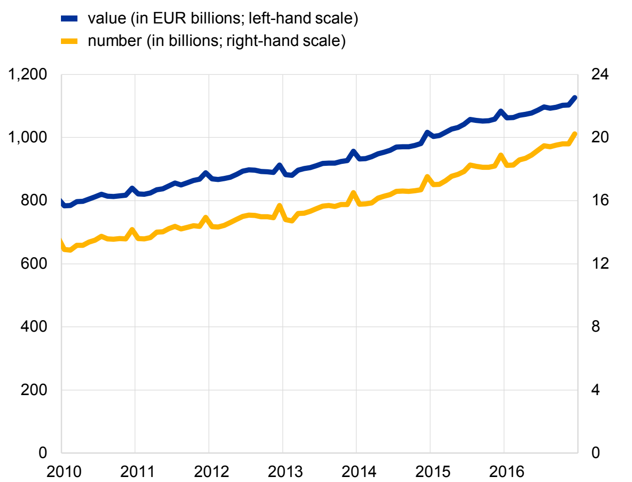
3 Banknotes and coins

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.

3.1 The circulation of banknotes and coins

In 2016 the number and value of euro banknotes in circulation grew by around 7.0% and 3.9% respectively. At the end of the year there were 20.2 billion euro banknotes in circulation, with a total value of €1,126 billion (see Charts 32 and 33). The €100 and €200 banknotes showed the highest annual growth rates, which reached 13.4% and 12.9% respectively in 2016. Growth in the €50 banknote remained dynamic, at 9.9%, but was slightly slower than in the previous year.

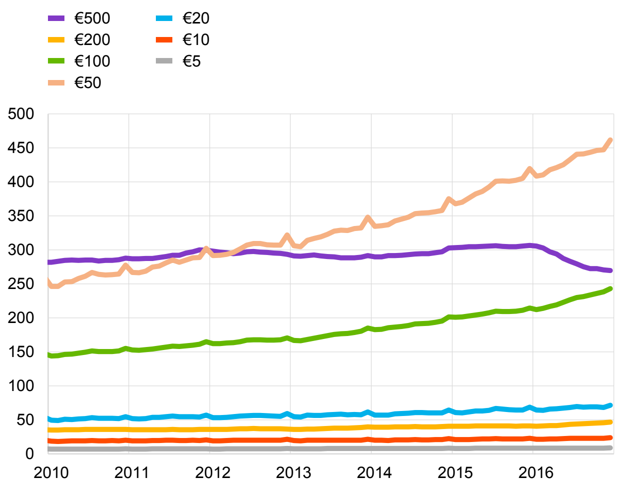
Chart 32
Number and value of euro banknotes in circulation



Source: ECB.

Chart 33
Value of euro banknotes in circulation by denomination

(EUR billions)



Source: ECB.

Following a review of the denominational structure of the second series of euro banknotes, known as the Europa series, the Governing Council decided to stop the production of the €500 banknote and to exclude it from the Europa series, taking into account concerns that this banknote could facilitate illicit activities. The issuance of the €500 banknote will be stopped around the end of 2018, close to the planned introduction of the €100 and €200 banknotes of the Europa series. The other denominations – from €5 to €200 – will remain in place. The production of euro banknotes is shared between the euro area NCBs, which were altogether allocated the production of 6.22 billion banknotes in 2016.

In view of the international role of the euro and the widespread trust in euro banknotes, the €500 banknote will remain legal tender and can therefore continue to be used as a means of payment and store of value. The €500 banknote, like the other denominations of euro banknotes, will always retain its value and can be exchanged at the euro area NCBs for an unlimited period of time.

Following the decision to stop issuing the €500 banknotes, the circulation of the €500 banknote decreased in 2016. This decline was partly compensated for by a higher demand for the €200, €100 and €50 banknotes.

Processing of euro 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.

In 2016 the total number of euro coins in circulation increased by 4.2%, standing at 121.0 billion at end-2016. At the end of 2016 the value of coins in circulation stood at €26.9 billion, 3.6% higher than at the end of 2015.

In 2016 the euro area NCBs checked the authenticity and fitness for circulation of some 32.3 billion banknotes, withdrawing around 5.4 billion of them from circulation. 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 2016 credit institutions and other professional cash handlers checked some 33 billion euro banknotes for authenticity and fitness using such machines.

3.2 A new €50 banknote

A new €50 banknote

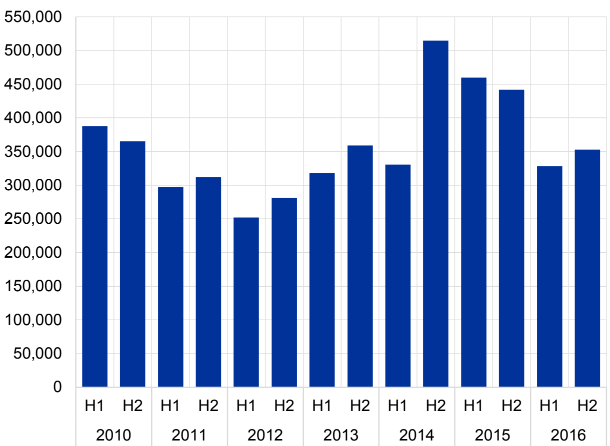
On 5 July 2016 the new €50 banknote, which will enter into circulation on 4 April 2017, was unveiled. The introduction of the new note is the latest step in making euro banknotes even more secure. After the €5, €10 and €20, the new €50 is the fourth denomination of the Europa series to be introduced. 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 preparation for the introduction of the new €50 banknote, the ECB and the euro area NCBs conducted a campaign to inform both the public and professional cash handlers about the new banknote and its features. They also took several measures to help the banknote handling machine industry prepare for the introduction of the new banknote.

3.3 Counterfeit euro banknotes

Chart 34

Number of counterfeit euro banknotes recovered from circulation



Source: ECB.

The total number of counterfeit euro banknotes decreased in 2016, with around 685,000 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 34. Counterfeiters tend to target the €20 and €50 banknotes, which in 2016 accounted together for around 80% of the total number of counterfeits seized. The share of counterfeit €20 banknotes fell in 2016.

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.

4 Statistics

The ECB, assisted by the NCBs, develops, collects, compiles and disseminates a wide range of statistics which are important to support the monetary policy of the euro area, the supervisory functions of the ECB, various other tasks of the 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 2016 the ESCB continued to provide regular euro area statistics in a smooth and timely manner. In addition, it devoted considerable efforts to fulfilling new demands for very timely, high-quality and more granular statistics at the country, sector and instrument levels. Such demands have resulted in the need to "move beyond the aggregates", a theme to which the ECB devoted its 8th Statistics Conference in July 2016.[90]

4.1 New and enhanced euro area statistics

In July 2016 the ECB started the daily collection of transaction-level data on the euro money market from the largest euro area banks, covering the main market segments (i.e. the secured, unsecured, foreign exchange swap and overnight index swap segments), with around 45,000 transactional records per day. This information will support several policy functions and will enable the publication of new statistics.

New enhanced statistics on insurance corporations have been collected under Regulation ECB/2014/50 (and the Solvency II Directive) for the first and second quarters of 2016. These data are the result of a multi-year collaboration between the ECB and the European Insurance and Occupational Pensions Authority and between NCBs and national competent authorities to minimise the reporting burden on the industry. The data are being assessed and aggregated ahead of their planned publication in 2017.

In April 2016 the euro area international investment position included for the first time a complete stock-flow reconciliation, and the quarterly euro area accounts included "who-to-whom" data for securities in addition to deposits and loans.

In September 2016 the ECB started publishing the monthly ECB and Eurosystem international reserves and foreign currency liquidity templates with a time lag of 15 days, advancing their publication by 15 calendar days.

90 For more information, see the ECB's website.

In November 2016 the ECB started to publish additional and more detailed quarterly data on the financial health of significant banks supervised directly by the ECB, with some statistics available by country and category. This will enhance transparency concerning the quality of banks' assets and support market discipline.

In December 2016 the ECB published the results of the second wave of the Household Finance and Consumption Survey, which covered more than 84,000 households in the euro area (except Lithuania) as well as in Hungary and Poland (see also Section 5 of Chapter 2). The analysis of the survey's findings will enable a better understanding of how microeconomic heterogeneity affects macroeconomic outcomes.

4.2 Other statistical developments

The ESCB continued to develop new or substantially improved microdata platforms as a primary source for its statistics. Although granular information implies a greater burden for the ESCB statistical function in terms of data processing and quality assurance, it has the potential advantage of reducing the burden on reporting agents. Moreover, it allows flexibility and agility in adapting to user needs and increases the quality and internal consistency of the data collected.

The Centralised Securities Database output was extended to facilitate, among other things, the management of collateral.

In May 2016 the ECB approved a new statistical Regulation (ECB/2016/13) establishing a granular database comprising harmonised data on credit and credit risk for the Eurosystem. The AnaCredit dataset will deliver, as of end-2018, monthly loan-by-loan information on credit granted by euro area banks and their foreign branches to companies and other legal entities as defined in the Regulation (no natural persons will be covered). In parallel, the capacity of the ESCB Register of Institutions and Affiliates Database (RIAD) will be extended to incorporate the necessary information on non-financial corporations.

In August 2016 the ECB amended the Regulation and Guideline concerning statistics on holdings of securities in order to collect additional accounting and credit risk attributes from banking groups. In addition, the list of reporting banking groups will be extended to cover all significant groups directly supervised by the ECB. Furthermore, the amended Guideline establishes a data quality management framework for assessing and ensuring the quality of output data.

The ESCB attaches great importance to the quality of its statistics, while trying to keep the reporting burden to a minimum. In this respect, the integration of statistical and supervisory requirements is essential to streamline the overall process of reporting by banks to national and European authorities. Three main workstreams in this field relate to: (i) the development of the Banks' Integrated Reporting Dictionary in cooperation with the industry, defining common rules to be applied by banks when reporting to the authorities[91]; (ii) the definition of a Single Data Dictionary for the Eurosystem and the SSM; and (iii) the establishment of a single, harmonised European Reporting Framework for banks.

In October 2016 the ECB decided to further enhance the transparency of the impact assessment undertaken for new ECB regulations on European statistics, by conducting, if deemed necessary, a public consultation in addition to the merits and costs procedure which has been carried out since 2000.

In November 2016 the European Commission and the ECB signed a Memorandum of Understanding between Eurostat and the ECB's Directorate General Statistics on the quality assurance of statistics underlying the macroeconomic imbalance procedure.

In 2016 the ECB also continued to make its statistics more accessible and user-friendly, for example through a new search functionality in the Statistical Data Warehouse, dynamic graphs, an updated ECBstatsApp, and new explainers on the ECB's "Our statistics" website.

5 Economic research

The production of high-quality scientific research helps provide solid and rigorous foundations for the ECB's policy analysis and thereby makes an important contribution to the achievement of policy objectives. During 2016 economic research at the ECB provided new insights into many challenging and shifting analytical priorities. In addition, the activities of three research networks fostered intense collaboration among researchers throughout the ESCB.[92]

5.1 ECB research priorities and clusters

Research conducted at the ECB is organised around seven research groups, which encompass a wide range of economic and financial topics (see Figure 1). These teams help coordinate the bank's research agenda across business areas. Furthermore, to best exploit the wide array of research talent that exists across the ECB, the groups cooperate with each other on topics that are of common interest. In 2016 ECB research teams focused on four key research priorities (see Figure 2), delivering insights linked to the transmission of monetary policy, the factors behind low inflation and the functioning of new institutional arrangements in EMU. Outside of these key areas, research also focused on the modest growth performance of the euro area, the global economic environment, banking and microprudential policy as well as model development and refinement. With regard to the latter, the focus has been on the development of more up-to-date country and euro area-wide models

91 For more information, see http://banks-integrated-reporting-dictionary.eu/

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

intended to capture more thoroughly the interactions between the financial and real sectors of the economy.

Figure 1
ECB research groups

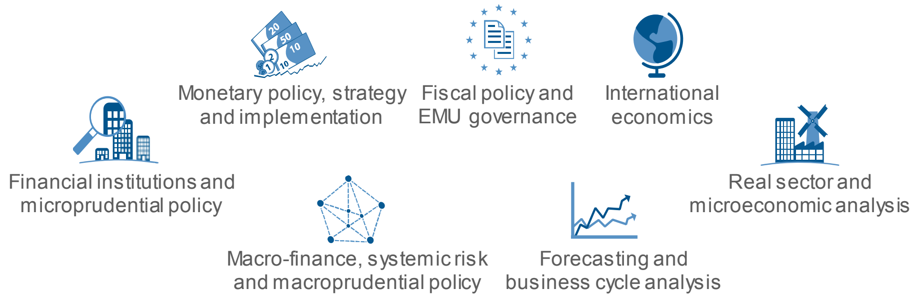


Figure 2
Research priorities in 2016

1. Non-standard monetary policy Asset purchases and refinancing operations Effective lower bound on interest rates Sustained adjustment of inflation	**2. Inflation in a changing environment** Risk of unanchoring inflation expectations Domestic and global drivers of low inflation
3. The new macroprudential framework Effectiveness of alternative policies Capital and liquidity regulation	**4. Deepening EMU and convergence** EMU governance and fiscal policy Competitiveness and convergence

5.2 Eurosystem/ESCB research networks

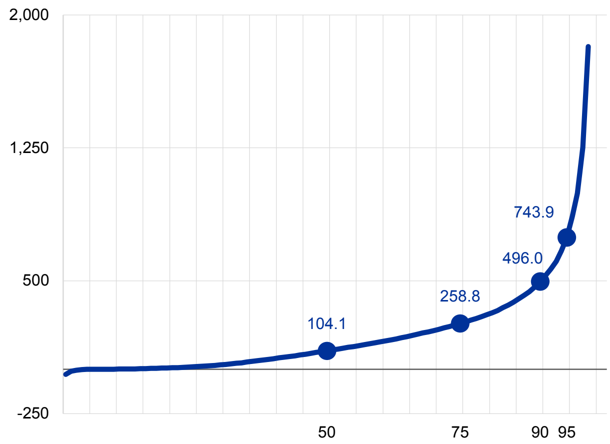
Eurosystem/ESCB research networks made significant progress during 2016, with all three networks delivering important insights into the functioning of the EU and euro area economies.

The Wage Dynamics Network (WDN) completed the third wave of its survey, aimed at assessing how firms in the EU have reacted to the various shocks and structural reforms that took place during the period 2010-13. The survey covers over 25,000 firms from 25 EU countries and yields a fully harmonised dataset which permits rigorous cross-country analysis. In the course of the year the network published country-level reports presenting key findings as well as an article in the ECB's Economic Bulletin highlighting extensive new evidence on wage adjustment. A key insight uncovered by this work is that the frequency of wage changes in EU countries was lower during the period 2010-13 than in the pre-crisis period (2002-07) and that this seems to be at least partly attributable to the resistance of firms to lower base wages, though the latter was lower in countries subject to a macroeconomic adjustment programme.

Chart 35

The wealth distribution of euro area households

(y-axis: EUR thousands; x-axis: percentiles of net wealth)



Source: The Eurosystem Household Finance and Consumption Survey.

The Household Finance and Consumption Network coordinates the production of the Household Finance and Consumption Survey and analyses the resulting data, with the ultimate objective of understanding how differences across consumers can help explain aggregate economic developments. In 2016 this network released a report presenting the results of the second wave of the survey covering more than 84,000 households in 20 countries. A key focus of the survey is on household wealth and its distribution across households (see Chart 35). The median household holds net wealth of €104,100; the 75th percentile of the distribution is €258,800, the 90th €496,000 and the 95th €743,900.The network conducted research on several broad areas, including: the determinants of consumption; the study of the financial fragility of households for the assessment of macroprudential tools; the distributional effects of asset prices and monetary policy[93]; the measurement of the wealth distribution across households; and the response of consumer spending to tax policy.

In the course of 2016 the Competitiveness Research Network continued to function as a hub for ESCB researchers in the area of competitiveness and productivity analysis. Research output was particularly rich with regard to international trade, the international transmission of economic shocks, and the efficiency of resource allocation in the EU. One major output of the network in 2016 was the collection and release of the fifth vintage of the network's EU firm-level dataset. The dataset consists of a comprehensive set of indicators related to productivity and is unique in terms of cross-country comparability and coverage. Research with these new data provided insights into the link between productivity gains and employment creation in the euro area.

5.3 Conferences and publications

In recent years cutting-edge research and dialogue with economists working in academia have become increasingly important as the number and complexity of issues relevant to the ECB have grown. With this in mind, the ECB organised several high-level research events in 2016 which focused on some of the most pressing issues facing central banks. Two major highlights of the year were the ECB Forum on Central Banking in Sintra and the ECB's first Annual Research Conference. Other important conferences included the International Monetary Policy Research Forum, the 9th ECB Workshop on Forecasting Techniques and the 12th Competitiveness Research Network Conference.

93 See also Box 5 in Section 2.1 of Chapter 1.

Many of the ECB's research activities also resulted in published papers. In total, 115 papers were published in the ECB's Working Paper Series during 2016. In addition, 73 papers either authored or co-authored by ECB staff were published in refereed journals. This pool of high-quality research papers also provided the basis for an enhanced communication of research findings to a wider and more general public, for instance via the ECB Research Bulletin.

6 Legal activities and duties

In 2016 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. Finally, the ECB adopted a number of legal acts and instruments in relation to its supervisory tasks.

6.1 ECB participation in judicial proceedings at the EU level

In September 2016 the Court of Justice of the European Union ruled on appeal in two sets of cases filed by some depositors in the Cypriot banks which were subject to the 2013 resolution measures. The applicants alleged that the relevant resolution measures were imposed by the ECB and the European Commission based on their involvement in the Eurogroup meetings and their role in the negotiation and adoption of the Cypriot Memorandum of Understanding ("Cypriot MoU").

In the first set of cases[94], the applicants sought the annulment of the Eurogroup statement of 25 March 2013 concerning Cyprus' financial assistance programme and in particular the restructuring of its banking sector. The Court of Justice confirmed the General Court's finding that the contested Eurogroup statement could not be regarded as a joint decision of the Commission and the ECB. The Court of Justice also observed that the adoption by the Cypriot authorities of the legal framework necessary for the restructuring of the banks could not be regarded as having been imposed by an alleged joint decision of the Commission and the ECB that was given concrete expression in the Eurogroup statement. The cases were therefore rejected as inadmissible.

In the second set of cases[95], the applicants sought compensation for the losses allegedly suffered as a result of the inclusion in the Cypriot MoU of paragraphs referring to the resolution of the two Cypriot banks and/or the annulment of these disputed paragraphs. The Court of Justice quashed the General Court inadmissibility orders on the basis that the allegedly unlawful conduct of EU institutions, even in the legal framework of the Treaty establishing the European Stability Mechanism ("ESM

94 Joined Cases C-105/15 P to C-109/15 P.

95 Joined Cases C-8/15 P to C-10/15 P.

Treaty"), may theoretically give rise to liability of the European Union under Article 340(2) and (3) of the Treaty on the Functioning of the European Union. This finding was based on the European Commission's obligation under Article 17(1) of the Treaty on European Union to promote the general interest of the Union and oversee the application of Union law, and its obligation under Article 13(3) and (4) of the ESM Treaty to ensure that any MoU concluded by the ESM is consistent with EU law. The Court of Justice held on substance that, in view of an objective of general interest pursued by the European Union, namely the objective of ensuring the financial stability of the banking system in the euro area, the resolution measures identified in the Cypriot MoU did not constitute an intolerable and disproportionate interference with the right to property of the appellants. Accordingly, the European Commission could not be considered, by dint of having permitted the adoption of the disputed paragraph in the Cypriot MoU, to have contributed to a breach of the appellants' right to property. The Court of Justice therefore dismissed the claims for compensation as lacking any foundation in law.

In July 2016 the General Court of the EU ruled in favour of the ECB in an annulment and damages case concerning certain ECB Governing Council decisions relating to the provision of emergency liquidity assistance (ELA) by the Bank of Greece to Greek banks. In Case T-368/15, the applicant alleged that the contested ELA decisions were unlawful and "inescapably resulted" in the temporary bank holidays and capital controls imposed by the Greek authorities in the summer of 2015, which in turn led to the applicant suffering "serious and irreparable damage". With respect to the annulment claim, the General Court found that the requirement for the contested ELA decisions to be of direct concern to the applicant was manifestly not satisfied and therefore dismissed the claim as inadmissible. In particular, the General Court held that by maintaining the ELA ceiling, the contested decisions did not in any way impose the measures at issue (i.e. the capital controls), with the result that the Greek authorities were fully at liberty to take measures other than those measures. The General Court also dismissed the damages claim as inadmissible.

In May 2016 the General Court decided on the appeal submitted by 150 ECB staff members (case T-129/14 P) against the judgement of the Civil Service Tribunal in case F-15/10 concerning the ECB pension reform. In May 2009, following a reform process of about two years, the ECB froze the existing Retirement Plan, a hybrid system, and adopted a new Pension Scheme composed of a defined benefit scheme as a first pillar and a defined contribution scheme as a second pillar. Pension rights are accrued in the ECB Pension Scheme for periods of service from 1 June 2009, for all staff members, including those who had taken up employment prior to or on the date of entry into force of the reform, with only one exception applying to members of staff who were between 60 and 65 years of age on 31 May 2009 and remained covered by the ECB Retirement Plan in respect of their past and future service. The appeal brought by 150 members of staff criticised several points of the first instance judgement in eight pleas in law. In its appeal judgement, the General Court upheld the judgement of the Civil Service Tribunal, rejecting all eight pleas in their entirety, and thereby again fully confirming the legality of the ECB pension reform. As regards the procedure followed to implement the reform, the General Court considered that the ECB had not breached the principles of legality and legal certainty. It confirmed that changes to the pension rules had been decided in compliance with the rules on competence and procedure. Regarding the substantive issues, this judgement occasioned an in-depth analysis of the nature of pension rights. The General Court considered that pension rights are not part of the notion of "remuneration" within the meaning of Directive 91/533[96]. Hence they are not an intangible element of the contract of employment, and the ECB is entitled to reform the retirement scheme without the consent of its staff. With regard to the acquired right invoked by the applicants to retire from the age of 60 with no reduction in benefits, the General Court recalled that it is settled case-law that an official cannot claim an acquired right unless the facts giving rise to that right arose prior to the amendment of the provisions. Moreover, the General Court considered that the acquired rights of members of staff who had reached the age of 60 when the reform entered into force were not affected by the reform given the transitional regime which the ECB had foreseen as part of the reform package.

6.2 ECB opinions and cases of non-compliance

Articles 127(4) and 282(5) of the Treaty on the Functioning of the European Union (the "Treaty") require that the ECB be consulted on any proposed EU or draft national legislation falling within its fields of competence.[97] 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 2016 the ECB adopted 8 opinions on proposed EU legislation and 53 opinions on draft national legislation falling within its field of competence.

At the EU level, the most significant opinions[98] adopted by the ECB related to a European framework for simple, transparent and standardised securitisation and amendments to the Capital Requirements Regulation (CON/2016/11), the unified representation of the euro area in the International Monetary Fund (CON/2016/22) and the establishment of a European deposit insurance scheme (CON/2016/26).

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96 Council Directive of 14 October 1991 on an employer's obligation to inform employees of the conditions applicable to the contract or employment relationships (91/533/EEC).

97 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.

98 The other opinions are: CON/2016/10 on a proposal for a regulation amending the Capital Requirements Regulation as regards exemptions for commodity dealers; CON/2016/15 on a proposal for a regulation on the prospectus to be published when securities are offered to the public or admitted to trading; CON/2016/27 on a proposed regulation amending the Markets in Financial Instruments Regulation, the Market Abuse Regulation and the Central Securities Depository Regulation and a proposed directive amending the Markets in Financial Instruments Directive; CON/2016/44 on a proposal for a regulation amending Regulation (EU) No 345/2013 on European venture capital funds and Regulation (EU) No 346/2013 on European social entrepreneurship funds; and CON/2016/49 on a proposal for a directive amending Directive (EU) 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing and amending Directive 2009/101/EC.

A number of consultations by national authorities concerned legislation related to banknotes and coins[99], the oversight of payment schemes[100], the book-entry securities system[101], mandatory requirements for credit transfers and direct debits[102] and the prevention of money laundering and terrorist financing[103].

The ECB adopted opinions concerning national central banks (NCBs), including the auditing requirements applicable to an NCB[104], an NCB's reporting obligations vis-à-vis the national parliament[105], the functioning of an NCB's decision-making body[106], the reduction in the remuneration of senior officials of an NCB[107], an NCB's acquisition of ownership of an entity performing monetary policy operations in its outermost regions and overseas territories[108], an NCB's ELA operations[109], an NCB's resolution tasks[110], an NCB's role in relation to a deposit guarantee scheme[111], NCBs' supervision of the provision of payment services[112], escrow institutions[113] and consumer credit arrangements[114], NCBs' operation of central credit registers and registers of bank accounts[115], an NCB's collection of financial statistics[116], the role of an NCB in assessing competition in the market for mortgage loans[117], an NCB's contribution to an IMF-administered trust[118], the role of an NCB in reporting on an insurance premium levy[119], the monetary policy instruments of non-euro area NCBs[120], the exclusion of set-off rights with respect to claims mobilised as collateral with ESCB central banks[121] and an NCB's issuance of commemorative banknotes[122].

The ECB adopted opinions on various aspects of the activities of financial institutions[123], including the insolvency hierarchy of creditors of credit institutions[124],

99 See CON/2016/2, CON/2016/4, CON/2016/25, CON/2016/36 and CON/2016/58.
100 See CON/2016/38 and CON/2016/61.
101 See CON/2016/46.
102 See CON/2016/13.
103 See CON/2016/23.
104 See CON/2016/24, CON/2016/30, CON/2016/33 and CON/2016/52.
105 See CON/2016/33, CON/2016/35 and CON/2016/52.
106 See CON/2016/9, CON/2016/33, CON/2016/47 and CON/2016/52.
107 See CON/2016/32.
108 See CON/2016/14.
109 See CON/2016/55.
110 See CON/2016/5 and CON/2016/28.
111 See CON/2016/3 and CON/2016/6.
112 See CON/2016/19.
113 See CON/2016/16.
114 See CON/2016/31 and CON/2016/34.
115 See CON/2016/42 and CON/2016/57.
116 See CON/2016/29.
117 See CON/2016/54.
118 See CON/2016/21.
119 See CON/2016/45.
120 See CON/2016/12, CON/2016/40 and CON/2016/56.
121 See CON/2016/37.
122 See CON/2016/60.
123 See CON/2016/17, CON/2016/41, CON/2016/50, CON/2016/1, CON/2016/18 and CON/2016/55.
124 See CON/2016/7, CON/2016/28 and CON/2016/53.

the imposition of limits on variable rates on mortgage loans[125], the remuneration of deposit savings accounts[126], mortgage amortisation requirements[127], the reimbursement of certain spreads charged on foreign exchange-linked loans[128], restructuring foreign currency loans[129], the reform of cooperative banks[130], restrictions on the acquisition of real property or share capital by credit institutions[131], the appointment of a bank's supervisory board members[132], payment-to-income and loan-to-value ratios[133], a guarantee scheme for securitisations of non-performing loans[134], the imposition of a tax on certain financial institutions[135], the functioning of central credit registers[136] and the functioning of national deposit guarantee schemes[137].

The ECB also adopted an opinion on the role of a national financial supervisory authority's representative on the ECB's Supervisory Board[138].

Eight cases of non-compliance with the obligation to consult the ECB on draft national legislation were recorded, with some cases being considered clear and important[139].

The ECB was not consulted by the Italian Ministry of Economy and Finance on the Decree Law on urgent measures for the protection of savings in the banking sector, aimed at setting the legal framework for the provision of extraordinary public financial support to Italian banks. The ECB was not consulted by the Greek Ministry of Finance on the law on electronic payments.

Finally, the ECB was not consulted by the Hungarian Ministry for National Economy on the Law on the National Home Building Communities[140], raising concerns about a possible breach of central bank independence.

The failures to consult the ECB by Greece, Hungary and Italy were considered to be clear and important and also repetitive cases.

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125 See CON/2016/54.
126 See CON/2016/51.
127 See CON/2016/18.
128 See CON/2016/50.
129 See CON/2016/39.
130 See CON/2016/17 and CON/2016/41.
131 See CON/2016/48.
132 See CON/2016/28.
133 See CON/2016/8.
134 See CON/2016/17.
135 See CON/2016/1.
136 See CON/2016/42.
137 See CON/2016/3 and CON/2016/6.
138 See CON/2016/43.
139 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.
140 Law on the National Home Building Communities, published in Magyar Kozlony (the Hungarian Official Journal), Issue 49, 11 April 2016.

6.3 Legal developments related to the Single Supervisory Mechanism

In 2016 the ECB adopted several legal instruments concerning the performance of its supervisory tasks which were published in the Official Journal of the European Union and on the ECB's website. A list of the legal instruments concerning banking supervision that were adopted in 2016 can be found in the ECB Annual Report on supervisory activities 2016.

6.4 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 2016 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 not all EU NCBs in 2016 had remuneration policies for public sector deposits in place that fully complied with the remuneration ceilings. In particular, 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.

The ECB assessed the establishment and funding of MARK Zrt., an asset management company, by the Magyar Nemzeti Bank as constituting a violation of the monetary financing prohibition that needs to be corrected.

In May 2016, the Magyar Nemzeti Bank provided a three-month bridge liquidity facility to the Hungarian investor compensation scheme Karrendezesi Alap. The ECB assessed that this operation potentially conflicts with the monetary financing prohibition given that other options were available to provide short-term financing to the investor compensation scheme that would not have resulted in the financial involvement of the Magyar Nemzeti Bank. This case should not serve as a precedent.

Following up on the concerns raised in the ECB's Annual Report of 2014 and 2015, the ECB has continued to monitor several programmes launched by the Magyar Nemzeti Bank in 2014 and 2015. These programmes were 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 included real estate investment purchases by the Magyar Nemzeti Bank, a programme to promote financial literacy run through a network of six foundations and the investment strategy of these foundations, the transfer to the central bank of staff formerly employed by the Hungarian Financial Supervisory Authority, a programme of purchases of Hungarian artworks and cultural properties, and a programme incentivising banks to purchase eligible securities, notably government bonds. In view of their multitude, scope and size, the ECB will continue to closely monitor these operations so as to ensure that there are no conflicts with the prohibition of monetary financing and of privileged access. The Magyar Nemzeti Bank should also ensure that the central bank resources that it conferred on its network of foundations are not used, directly or indirectly, for state financing purposes. 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 2016, mainly through sales of long-duration floating rate notes, is a step in the direction of the necessary full disposal of these assets. However, a more ambitious sales schedule would further mitigate the persisting serious monetary financing concerns.

7 International and European relations

7.1 European relations

In 2016 the ECB maintained its close dialogue with European institutions and fora, in particular with the European Parliament, the European Council, the ECOFIN Council, the Eurogroup and the European Commission. Further steps were taken in the course of the year to complete banking union and to continue the repair of the financial sector in the euro area. The economic situation in the euro area and the macroeconomic adjustment programme for Greece also 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. The need for a coherent strategy for fiscal, financial and structural policies to strengthen the recovery in Europe was a topic of discussion in European Council meetings, in which the President of the ECB participated.

7.1.1 Completing Europe's Economic and Monetary Union

Further work on completing Economic and Monetary Union (EMU) was undertaken, in line with the roadmap set out in 2015 in the so-called Five Presidents' report entitled "Completing Europe's Economic and Monetary Union".

Progress was made on the banking union by implementing the Bank Recovery and Resolution Directive and the Deposit Guarantee Scheme Directive. Throughout the year, the ECB also continued to advocate decisive steps to complete banking union, particularly in technical discussions aimed at creating a credible common backstop to the Single Resolution Fund and a European deposit insurance scheme. Alongside banking union, a European capital markets union has the potential to make the financial system more resilient by improving cross-border risk-sharing and fostering broader and easier access to finance.

As regards the economic governance framework, the European Fiscal Board became operational. Looking ahead, the mandate and institutional independence of the European Fiscal Board should be strengthened to ensure that it can play an important role in increasing transparency and improving compliance with the fiscal rules.[141] On 20 September 2016 the EU Council issued a recommendation calling upon the euro area countries to establish national productivity boards. Productivity boards are expected to provide new impetus to the implementation of structural reforms in euro area countries. Their effectiveness will depend not only on the expected high level of technical expertise within the boards, but also on their full independence. The work of the productivity boards would need to ensure that the European dimension is sufficiently taken into account, by exchanging best practices among Member States and by emphasising the euro area dimension when assessing and addressing productivity issues at Member State level.

Moreover, the ECB has regularly underlined the need for the consistent and thorough application of the provisions of the current governance framework, where progress has been unsatisfactory so far. This is exemplified by the limited implementation of the European Commission's country-specific recommendations (see also Section 1.6 of Chapter 1) and the lack of compliance with the requirements of the Stability and Growth Pact.

Full implementation of the budgetary rules and a more effective coordination of economic policies will be a prerequisite for creating the necessary trust among Member States to go ahead with EMU deepening. The ECB has emphasised the importance of greater shared sovereignty in the medium to long run, for example through enhanced governance by moving from a system of rules towards institutions[142].

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141 For more details, see the box entitled "The creation of a European Fiscal Board", *Economic Bulletin*, Issue 7, ECB, 2015.

142 See also the article entitled "Increasing resilience and long-term growth: the importance of sound institutions and economic structures for euro area countries and EMU", *Economic Bulletin*, Issue 5, ECB, 2016.

At the same time, Europe also faces challenges outside the economic sphere, notably in the realms of migration and security. A strong economy is needed to address these issues in a sustainable manner. Completing EMU is thus an important endeavour in making Europe stronger. The Eurosystem stands ready to support this work.

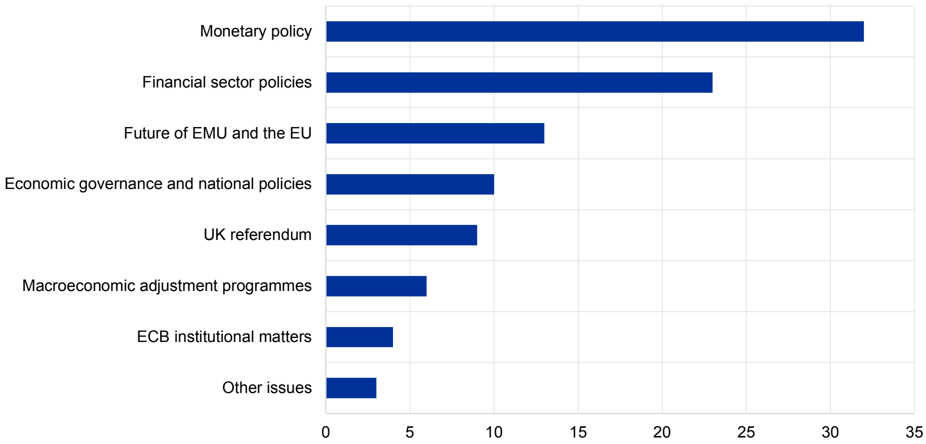
7.1.2 Discharging democratic accountability

The ECB is an independent institution which enjoys full independence in using its instruments as necessary within its mandate. Accountability is the necessary counterpart to that independence and 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 EU's citizens.

In 2016 the President of the ECB attended four regular hearings of the Committee on Economic and Monetary Affairs of the European Parliament.[143] At these hearings, Members of the European Parliament (MEPs) focused in particular on the ECB's monetary policy, financial sector policies, macroeconomic adjustment programmes and the reform of euro area governance (see Chart 36).

Chart 36
Topics of the questions asked during the regular hearings of the Committee on Economic and Monetary Affairs

(percentages)



Source: ECB.

In 2016 the ECB decided to publish for the first time its feedback on the input provided by the European Parliament as part of its resolution on the previous year's Annual Report, in response to a suggestion made in the European Parliament

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

resolution as a step to further enhance accountability.[144] This feedback had previously only been given to MEPs together with the Annual Report.

Table 3

Overview of 2016 hearings at the European Parliament

Hearing	Executive Board member	Date	Topics discussed
Regular hearings at the Committee on Economic and Monetary Affairs (ECON)	President	15 February	See Chart 36
		21 June	
		26 September	
		28 November	
Hearings related to the ECB's Annual Report	President	1 February	Plenary debate on the ECB's Annual Report for 2014
	Vice-President	7 April	Presentation of the ECB's Annual Report for 2015 (ECON meeting)
	President	21 November	Plenary debate on the ECB's Annual Report for 2015
Other hearings	Sabine Lautenschläger	25 January	Collection of credit data (ECON meeting)
	Benoît Cœuré	2 March	Fiscal capacity for the euro area (joint meeting of ECON and the Committee on Budgets)
		12 October	Greece's third macroeconomic adjustment programme (Financial Assistance Working Group meeting)

Source: ECB.

The ECB also discharges its accountability obligations through regular reporting and by answering written questions from MEPs. In 2016 the President of the ECB received letters containing such questions, the replies to which have been published on the ECB's website.[145] Most of the questions focused on the implementation of the ECB's non-standard monetary policy measures, the economic outlook and macroeconomic adjustment programmes.

As in the past, the ECB provided input into the discussions of the European Parliament and the EU Council on legislative proposals within its competency. Outside the accountability framework, other ECB representatives participated in public meetings before the Committee on Economic and Monetary Affairs for technical discussions on the issues related to the ECB's areas of expertise and tasks.

The ECB is also held accountable for its banking supervision activities by both the European Parliament and the EU Council.[146] More detailed information is provided in the 2016 ECB Annual Report on supervisory activities.

7.2 International relations

In a challenging international environment, the ECB participated in discussions in international fora, gathered information and communicated on its own policy, thus

144 See paragraph 23 of the European Parliament resolution on the ECB's Annual Report for 2014, available on the European Parliament's website.

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

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

strengthening relations with key international counterparts. This was especially important in a year when monetary authorities across the globe continued to support the nascent economic recovery.

7.2.1 G20

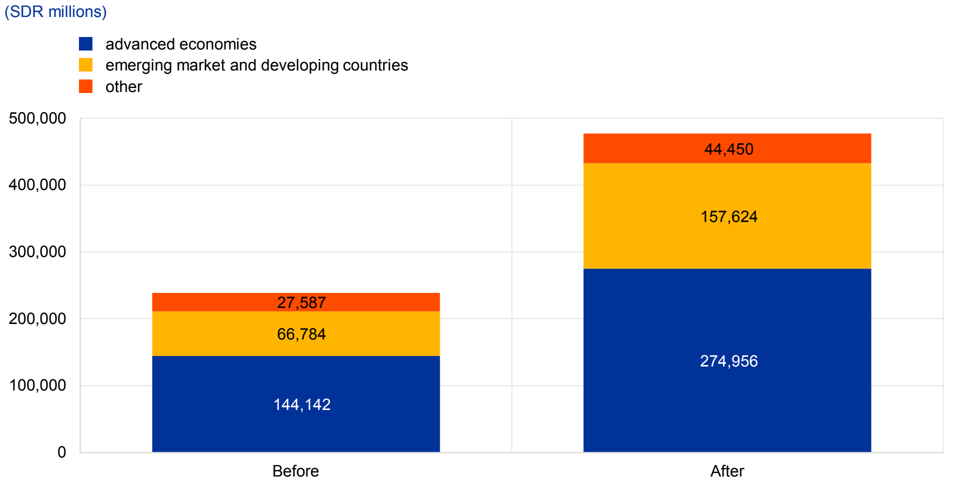
Amid the continued sluggish global economic recovery, China’s G20 presidency focused on fostering global growth and succeeded in highlighting the role of structural reforms in complementing fiscal and monetary policy to achieve this goal. The G20 presidency moreover broadened the debate on the engines of growth to include innovation and digitalisation. The G20 also put in place further measures to allow a better peer review of structural reforms under its “enhanced structural reform agenda”. Against the background of rising anti-globalisation sentiment, the G20 focused more on inequality and inclusiveness and also encouraged progress towards a fairer global tax environment with a new focus on beneficial ownership and how to address uncooperative tax jurisdictions. The G20 finance ministers and central bank governors, whose meetings are attended by the President of the ECB, committed to consult closely on foreign exchange markets and to avoid any form of protectionism in trade and investment policies. Efforts to address terrorism financing have also been stepped up amid recent terrorist attacks. The finalisation of the core elements of the financial regulatory framework was supported, with an emphasis on a timely, full and consistent implementation of the agreed financial sector reform agenda. At the Hangzhou summit, G20 leaders also encouraged progress in terms of promoting green financing and, in the context of discussions on the international financial architecture, examining the broader use of special drawing rights (SDRs), broadening the membership of the Paris Club and promoting the role of the new and existing multilateral development banks.

7.2.2 Policy issues related to the IMF and the international financial architecture

The ECB continued to promote common European positions in discussions at the International Monetary Fund (IMF) on Fund policies and the international financial architecture more generally. In terms of IMF governance, the far-reaching 2010 quota and governance reform became effective in early 2016 following ratification by the required majorities of IMF members. This resulted in a shift of more than 6% of quota shares to dynamic emerging market and developing countries, better reflecting their increased role in the global economy. As part of this reform package, advanced European countries committed to reduce their combined Board representation by two chairs.

Chart 37

Distribution of IMF quotas before and after the 2010 reform



Sources: IMF and ECB staff calculations.

The ECB supports a strong, quota-based and adequately resourced IMF at the centre of the international monetary system, where it makes an important contribution to global economic and financial stability. With the backing of EU Member States, total IMF quota resources doubled to SDR 477 billion in 2016. The IMF membership, including a number of EU Member States, also committed around SDR 260 billion to ensure the Fund's continued access to bilateral borrowing under a strengthened governance framework. The timeline for discussions on the Fifteenth General Review of Quotas was altered with the purpose of concluding the review no later than the Annual Meetings of 2019.

As it is vital that the IMF's lending polices remain relevant to the needs of its membership, the IMF examined the adequacy of the global financial safety net, including its coverage, its availability and the costs of providing crisis prevention and resolution instruments.

Following crises in some euro area countries and related EU-IMF lending and adjustment programmes for those countries, the IMF's Independent Evaluation Office (IEO) published a comprehensive report on the Fund's role during these crises and its participation in financial assistance programmes for Greece, Ireland and Portugal. While the report largely focused on the IMF's decision-making process, it also included some reflections on economic issues such as the causes of the crisis and the nature and appropriateness of policy conditions.

7.2.3 Technical cooperation

The ECB broadened its technical cooperation with central banks outside the European Union to foster sound central banking practices and thereby contribute to global monetary and financial stability. The cooperation activities reflect the ECB's role as a major central bank in the global economy. The ECB continued to collaborate with central banks of G20 emerging market economies (e.g. India and Turkey) to share technical expertise and best practices. In 2016 a new Memorandum of Understanding was signed with the Banco Central do Brasil as a basis for intensified cooperation, focusing on core central banking topics including monetary policy, financial stability and banking supervision. Strengthened cooperation with international and regional organisations supported the ECB's outreach in Latin America, Asia and Africa.

The ECB's cooperation with central banks in countries that have a prospect of joining the European Union continued, mainly through a regional workshop series. Dedicated events focused on institutional challenges in the context of EU accession, macroprudential and microprudential supervision, and central bank independence as a key element of good economic governance. Technical cooperation with central banks of EU candidate and potential candidate countries is performed in close cooperation with EU NCBs and complements the ECB's regular monitoring and analysis of economic and financial developments in these countries and the policy dialogue with their central banks.

Box 9
Brexit – implications and outlook

On 23 June 2016 the United Kingdom held a referendum on EU membership. A majority of 51.9% voted in favour of the United Kingdom leaving the European Union. According to Article 50 of the Treaty on European Union, the formal notification by the United Kingdom to the European Council of its intention to withdraw from the European Union will start a process of negotiating a withdrawal agreement between the European Union and the United Kingdom. At present, high uncertainty surrounds the United Kingdom's future economic relationship with the European Union.[147]

The immediate aftermath of the referendum was characterised by heightened uncertainty, a short-lived bout of volatility, and a sharp depreciation of the pound sterling. The euro area weathered the spike in uncertainty and volatility with encouraging resilience thanks to the preparations of central banks and supervisory authorities (including central bank liquidity backstops and supervisors' engagement with banks as regards liquidity, funding and operational risks) as well as the enhanced regulatory framework.[148] While the high levels of excess liquidity made it unlikely that the ECB would have had to resort to contingency measures, it was ensured – as mentioned in the ECB's press release of 24 June 2016 – that additional liquidity could have been provided if needed, including via standing swap arrangements with the Bank of England. Moreover, ECB Banking Supervision had been in close contact with the most exposed banks prior to the referendum to ensure that they were carefully monitoring the risks and preparing for the possible outcomes of the referendum.

Looking ahead, the precise economic implications of the referendum result are difficult to predict. They will notably depend on the timing, progress and final outcome of the upcoming negotiations between the European Union and the United Kingdom. The impact of the referendum outcome on the economic outlook for the euro area was analysed in the September 2016 ECB staff

[147] See also Section 1.1 of Chapter 1.

[148] See Section 1.2 of Chapter 1 for a more extensive analysis.

macroeconomic projections and an ECB Economic Bulletin box, which found only a limited impact on economic activity in the euro area in the short term. In addition, the ECB's November 2016 Financial Stability Review covered financial stability aspects related to the referendum outcome. It found that most market segments affected by the turbulence following the UK referendum quickly recovered the bulk of their losses.

The President of the ECB also explained the ECB's assessment of the possible impact of Brexit on several occasions to the European Parliament, for example on 26 September 2016 and 28 November 2016. On these occasions, the ECB underlined the benefits of the Single Market for both the euro area and the United Kingdom. Whatever form the relationship between the European Union and the United Kingdom takes, it will be imperative that the integrity of the Single Market and the homogeneity of rules and their enforcement are preserved. At their informal meeting in Bratislava in September, the Heads of State or Government of the remaining 27 EU Member States for the first time discussed their common future after the expected withdrawal of the United Kingdom. To respond to citizens' current concerns, they agreed on a road map for tackling common challenges related to migration, terrorism and economic and social insecurity. The ECB underlined on several occasions that for Europe to strengthen its capacity in these areas, the European project needed stronger economic foundations.

8 External communication

Explaining the ECB's policy to European citizens

Open and transparent communication supports the effectiveness of a central bank's policy. It allows the bank to keep the general public and financial markets informed about its objectives and tasks, explain the reasons for its actions and thereby guide their expectations. The ECB has a long tradition of open communication and in 2016 continued to enhance its communication, in particular by further developing its outreach activities and digital communication.

Outreach activities

In 2016 the ECB further developed its initiatives to reach out to the general public to improve understanding of the ECB's policies and decisions and, in this way, to build greater trust among euro area citizens.

The ECB welcomed 522 visitor groups in Frankfurt, hosting more than 15,000 external visitors from 35 countries. Visitors were offered general presentations as well as targeted presentations allowing for interaction with ECB experts. They were also able to explore the new ECB building and its art and euro exhibitions in guided tours. In July 2016 the ECB also started opening its doors on the first Saturday of every month to the local community, attracting more than 3,000 visitors in the second half of the year.

To explain its tasks to younger citizens of the euro area, the ECB held its Generation €uro Students' Award competition for the sixth time. The competition is the Bank's primary interaction channel with students aged between 16 and 19 and their teachers, and aims to teach them more about monetary policy and the ECB. The students participate in a role play in which they take monetary policy decisions on the basis of their diagnosis of the economic and monetary situation in the euro area.

The ECB also focused on younger age groups. On 3 October 2016, 230 children aged between eight and ten, together with their families, were welcomed to the ECB for the second open day of the popular German children's TV show "Die Sendung mit der Maus". The programme included guided tours of the building, presentations, workshops on the role and function of the ECB and the euro banknotes and coins, educational games and several exhibitions.

Outreach efforts were also conducted outside Frankfurt. For example, the ECB, together with the Central Bank of Ireland, attended Ireland's National Ploughing Championships 2016, the largest outdoor exhibition and agricultural trade show in Europe.

Greater digitalisation

The ECB has also further increased its digital communication efforts in order to adapt to current news consumption patterns.

From a content perspective, the ECB has stepped up efforts to be more accessible to the general public, making its decisions better understood by using plain language and digital communication channels to explain otherwise rather technical concepts. One example of this are the explainers on the ECB's website, which are available in many EU languages. A more intensive use of infographics has also accompanied this digital focus.

From a technical perspective, the Bank further modernised its websites. The websites of both the ECB and the European Systemic Risk Board have been made fully responsive, ensuring that web pages and important publications can be viewed in an optimal way regardless of the device which readers choose. In addition, the ECB has met the increased demand for high-quality web streaming of events.

The Bank's presence on social media platforms has increased further. The ECB's Twitter account now counts more than 360,000 followers and is used to highlight publications and key messages from speeches. In December 2016 the ECB held its first live debate on Twitter, during which Benoît Cœuré answered questions posted by the general public under #askECB, thereby allowing for direct interaction in real time. Furthermore, the ECB uses its YouTube channel to publish video content and Flickr for photographs. The ECB also holds a LinkedIn account to which some 43,000 citizens have subscribed.

Annexes

1 Institutional framework

Decision-making bodies and corporate governance of the ECB

The Eurosystem and the European System of Central Banks (ESCB) are governed by the decision-making bodies of the ECB: the Governing Council and the Executive Board. The General Council is constituted as a third decision-making body of the ECB for as long as there are EU Member States which have not yet adopted the euro. The functioning of the decision-making bodies is governed by the Treaty on the Functioning of the European Union, the Statute of the ESCB and the relevant Rules of Procedure.[149] Decision-making within the Eurosystem and the ESCB is centralised. However, the ECB and the euro area national central banks (NCBs) jointly contribute, strategically and operationally, to attaining the common goals of the Eurosystem, with due respect to the principle of decentralisation in accordance with the Statute of the ESCB.

In the context of the ECB's responsibilities related to banking supervision, the Governing Council adopts legal acts establishing the general framework within which supervisory decisions are taken and approves, under the non-objection procedure, draft supervisory decisions prepared by the Supervisory Board.[150] More detailed information on the ECB's supervisory function can be found in the ECB Annual Report on supervisory activities 2016.

The Governing Council

The Governing Council is the main decision-making body of the ECB. It comprises the members of the Executive Board of the ECB and the governors of the NCBs of the euro area countries. The voting rights of the members of the Governing Council rotate according to a specific scheme that is available on the ECB's website.

The Governing Council usually meets every two weeks at the ECB's premises in Frankfurt am Main, Germany. In 2016 a total of 23 meetings took place. Meetings dedicated to monetary policy are held every six weeks. An account of these

[149] For the ECB's Rules of Procedure, see: Decision (EU) 2016/1717 of the ECB of 21 September 2016 amending Decision ECB/2004/2 adopting the Rules of Procedure of the ECB (ECB/2016/27), OJ L 258, 24.9.2016, p. 17 and Decisions ECB/2015/8, ECB/2014/1 and ECB/2009/5; Decision ECB/2004/2 of 19 February 2004 adopting the Rules of Procedure of the European Central Bank, OJ L 80, 18.3.2004, p. 33; Decision ECB/2004/12 of 17 June 2004 adopting the Rules of Procedure of the General Council of the ECB, OJ L 230, 30.6.2004, p. 61; and Decision ECB/1999/7 of 12 October 1999 concerning the Rules of Procedure of the Executive Board of the ECB, OJ L 314, 8.12.1999, p. 34. These rules are available on the ECB's website.

[150] Further information on decision-making within the Single Supervisory Mechanism can be found on the ECB Banking Supervision website.

monetary policy meetings is published, generally with a four-week time lag. At the non-monetary policy meetings, the Governing Council mainly discusses issues related to other tasks and responsibilities of the ECB and the Eurosystem. To ensure the separation of the ECB's monetary policy and other tasks from its supervisory responsibilities, separate meetings of the Governing Council are held for supervisory issues.

The Governing Council can also take decisions by means of a written procedure. In 2016 more than 1,400 written procedures were conducted, of which more than 1,000 were non-objection procedures.

The Governing Council

Mario Draghi President of the ECB

Vítor Constâncio Vice-President of the ECB

Josef Bonnici Governor of the Central Bank of Malta (until 30 June 2016)

Benoît Cœuré Member of the Executive Board of the ECB

Carlos Costa Governor of the Banco de Portugal

Chrystalla Georghadji Governor of the Central Bank of Cyprus

Ardo Hansson Governor of Eesti Pank

Boštjan Jazbec Governor of Banka Slovenije

Klaas Knot President of De Nederlandsche Bank

Philip R. Lane Governor of the Central Bank of Ireland

Sabine Lautenschläger Member of the Executive Board of the ECB

Erkki Liikanen Governor of Suomen Pankki – Finlands Bank

Luis M. Linde Governor of the Banco de España

Jozef Makúch Governor of Národná banka Slovenska

Yves Mersch Member of the Executive Board of the ECB

Ewald Nowotny Governor of the Oesterreichische Nationalbank

Peter Praet Member of the Executive Board of the ECB

Gaston Reinesch Governor of the Banque centrale du Luxembourg

Ilmārs Rimšēvičs Governor of Latvijas Banka

Jan Smets Governor of the Nationale Bank van België/
Banque Nationale de Belgique

Yannis Stournaras Governor of the Bank of Greece

Vitas Vasiliauskas Chairman of the Board of Lietuvos bankas

Mario Vella Governor of the Central Bank of Malta (from 1 July 2016)

François Villeroy de Galhau Governor of the Banque de France

Ignazio Visco Governor of the Banca d'Italia

Jens Weidmann President of the Deutsche Bundesbank

Front row (from left to right): Yannis Stournaras, Carlos Costa, Ewald Nowotny, Vítor Constâncio, Mario Draghi, Sabine Lautenschläger, Benoît Cœuré, Chrystalla Georghadji, Philip R. Lane, Yves Mersch

Middle row (from left to right): Ilmārs Rimšēvičs, François Villeroy de Galhau, Jens Weidmann, Erkki Liikanen, Jozef Makúch, Ignazio Visco

Back row (from left to right): Gaston Reinesch, Boštjan Jazbec, Ardo Hansson, Klaas Knot, Jan Smets, Peter Praet, Vitas Vasiliauskas

Note: Luis M. Linde and Mario Vella were not available at the time the photograph was taken.

The Executive Board

The Executive Board comprises the President and the Vice-President of the ECB and four other members appointed by the European Council, acting by qualified majority, after consultation with the European Parliament and the ECB. The Executive Board is responsible for the preparation of Governing Council meetings, the implementation of monetary policy for the euro area in accordance with the guidelines specified and decisions taken by the Governing Council, and the management of the day-to-day business of the ECB.

The Executive Board

Mario Draghi President of the ECB

Vítor Constâncio Vice-President of the ECB

Benoît Cœuré Member of the Executive Board of the ECB

Sabine Lautenschläger Member of the Executive Board of the ECB

Yves Mersch Member of the Executive Board of the ECB

Peter Praet Member of the Executive Board of the ECB

Front row (left to right): Sabine Lautenschläger, Mario Draghi, Vítor Constâncio

Back row (left to right): Yves Mersch, Peter Praet, Benoît Cœuré

The General Council

The General Council is composed of the President and the Vice-President of the ECB and the governors of the NCBs of all 28 EU Member States. Among other things, the General Council contributes to the ECB's advisory functions, the collection of statistical information, the establishment of the necessary rules for standardising the accounting and reporting of operations undertaken by the NCBs, the taking of measures relating to the establishment of the key for the ECB's capital subscription other than those laid down in the Treaty, and the laying-down of the conditions of employment of the members of staff of the ECB.

The General Council

Mario Draghi President of the ECB

Vítor Constâncio Vice-President of the ECB

Marek Belka President of Narodowy Bank Polski (until 20 June 2016)

Josef Bonnici Governor of the Central Bank of Malta (until 30 June 2016)

Mark Carney Governor of the Bank of England

Carlos Costa Governor of the Banco de Portugal

Chrystalla Georghadji Governor of the Central Bank of Cyprus

Adam Glapiński President of Narodowy Bank Polski (from 21 June 2016)

Ardo Hansson Governor of Eesti Pank

Stefan Ingves Governor of Sveriges Riksbank

Mugur Constantin Isărescu Governor of Banca Naţională a României

Boštjan Jazbec Governor of Banka Slovenije

Klaas Knot President of De Nederlandsche Bank

Philip R. Lane Governor of the Central Bank of Ireland

Erkki Liikanen Governor of Suomen Pankki – Finlands Bank

Luis M. Linde Governor of the Banco de España

Jozef Makúch Governor of Národná banka Slovenska

György Matolcsy Governor of the Magyar Nemzeti Bank

Ewald Nowotny Governor of the Oesterreichische Nationalbank

Dimitar Radev Governor of Българска народна банка (Bulgarian National Bank)

Gaston Reinesch Governor of the Banque centrale du Luxembourg

Ilmārs Rimšēvičs Governor of Latvijas Banka

Lars Rohde Governor of Danmarks Nationalbank

Jiří Rusnok Governor of Česká národní banka (from 1 July 2016)

Miroslav Singer Governor of Česká národní banka (until 30 June 2016)

Jan Smets Governor of the Nationale Bank van België/
Banque Nationale de Belgique

Yannis Stournaras Governor of the Bank of Greece

Vitas Vasiliauskas Chairman of the Board of Lietuvos bankas

Mario Vella Governor of the Central Bank of Malta (from 1 July 2016)

François Villeroy de Galhau Governor of the Banque de France

Ignazio Visco Governor of the Banca d'Italia

Boris Vujčić Governor of Hrvatska narodna banka

Jens Weidmann President of the Deutsche Bundesbank

Front row (left to right): Yannis Stournaras, Carlos Costa, Ewald Nowotny, Vítor Constâncio, Mario Draghi, Mark Carney, Chrystalla Georghadji, Philip R. Lane

Middle row (left to right): Ilmārs Rimšēvičs, François Villeroy de Galhau, Jens Weidmann, Erkki Liikanen, Ignazio Visco

Back row (left to right): Gaston Reinesch, Boštjan Jazbec, Lars Rohde, Ardo Hansson, Klaas Knot, Jan Smets, Jozef Makúch, Vitas Vasiliauskas, Dimitar Radev

Note: Adam Glapiński, Stefan Ingves, Mugur Constantin Isărescu, Luis M. Linde, György Matolcsy, Jiří Rusnok, Boris Vujčić and Mario Vella were not available at the time the photograph was taken.

Corporate governance

In addition to the decision-making bodies, the corporate governance structure of the ECB encompasses two high-level committees – the Audit Committee and the Ethics Committee – and a number of other external and internal control layers. It is complemented by the Ethics Framework, the ECB Decision[151] providing the terms and conditions for anti-fraud investigations, and the rules concerning public access to ECB documents. Following the establishment of the Single Supervisory Mechanism (SSM), corporate governance issues have gained even more significance for the ECB.

Audit Committee

The ECB Audit Committee supports the Governing Council by providing advice and opinions in respect of (i) the integrity of financial information, (ii) the oversight of internal controls, (iii) compliance with applicable laws, regulations and codes of

[151] Decision (EU) 2016/456 of the European Central Bank of 4 March 2016 concerning the terms and conditions for European Anti-Fraud Office investigations of the European Central Bank, in relation to the prevention of fraud, corruption and any other illegal activities affecting the financial interests of the Union (ECB/2016/3), OJ L 79, 30.3.2016, p. 34.

conduct, and (iv) the performance of the audit functions. Its mandate is available on the ECB's website. The Audit Committee is chaired by Erkki Liikanen and in 2016 included four other members: Vítor Constâncio, Josef Bonnici[152], Patrick Honohan and Ewald Nowotny.

Ethics Committee

In order to ensure the adequate and coherent implementation of the various codes of conduct of the bodies involved in the ECB's decision-making processes, the Ethics Committee provides advice and guidance on questions of ethics to the members of the Governing Council, the Executive Board and the Supervisory Board. Its mandate is available on the ECB's website. The Ethics Committee is chaired by Jean-Claude Trichet and includes two other external members: Patrick Honohan[153] and Klaus Liebscher.

External and internal control layers

External control layers

The Statute of the ESCB provides for two external control layers, namely the external auditor, appointed on a rotating basis for a five-year term to audit the annual accounts of the ECB, and the European Court of Auditors, which examines the operational efficiency of the management of the ECB.

Internal control layers

A three-tier system of internal controls has been established at the ECB consisting of (i) management controls, (ii) various risk and compliance oversight functions, and (iii) independent audit assurance.

The internal control structure of the ECB is based on a functional approach in which each organisational unit (section, division, directorate or directorate general) has primary responsibility for managing its own risks, as well as for ensuring the effectiveness and efficiency of its operations.

Oversight functions comprise monitoring mechanisms and effective processes to achieve adequate control of financial and operational risks as well as reputational and conduct risks. These second-level control functions are performed by internal ECB functions (such as the budget and controlling function, the operational and financial risk management functions, the quality assurance function for banking supervision or the compliance function) and/or – as relevant – by Eurosystem/ESCB committees (e.g. the Organisational Development Committee, the Risk Management Committee or the Budget Committee).

[152] From 1 December 2016, replacing Hans Tietmeyer.

[153] From 1 August 2016, replacing Hans Tietmeyer.

In addition, and independently from the internal control structure and risk monitoring of the ECB, audit missions are performed by the ECB's internal audit function under the direct responsibility of the Executive Board, in accordance with the ECB Audit Charter. The ECB's internal audit activities conform to the International Standards for the Professional Practice of Internal Auditing of the Institute of Internal Auditors. Furthermore, the Internal Auditors Committee, which is composed of internal audit experts from the ECB, the NCBs and the national competent authorities, assists the Eurosystem/ESCB and the SSM in accomplishing their objectives.

ECB Ethics Framework

The ECB Ethics Framework consists of the Code of Conduct for the members of the Governing Council, the Supplementary Code of Ethics Criteria for the members of the Executive Board, the Code of Conduct for the members of the Supervisory Board and the ECB Staff Rules. The Ethics Framework establishes ethical rules and guiding principles to ensure that the highest levels of integrity, competence, efficiency and transparency are met in the performance of ECB tasks. It includes, among other things, detailed provisions governing the avoidance and management of potential conflicts of interest; restrictions, reporting obligations and a monitoring scheme concerning private financial transactions; cooling-off rules concerning subsequent occupational activities; and detailed rules concerning external activities and relations with external parties.

Anti-fraud/anti-money laundering measures

In 1999 the European Parliament and the EU Council adopted a Regulation[154] to allow, among other things, internal investigations by the European Anti-Fraud Office (OLAF) of suspected fraud within EU institutions, bodies, offices and agencies. The legal framework covering the terms and conditions for investigations by OLAF of the ECB in relation to the prevention of fraud, corruption and any other illegal activities was endorsed by the Governing Council in 2004 and revised in 2016.[155] Furthermore, in 2007 the ECB established its internal anti-money laundering (AML) and counter-terrorist financing (CTF) schemes. An internal reporting system complements the ECB's AML/CTF framework to ensure that all relevant information is systematically collected and duly communicated to the Executive Board.

154 Regulation (EC) No 1073/1999 of the European Parliament and of the Council of 25 May 1999 concerning investigations conducted by the European Anti-Fraud Office (OLAF), OJ L 136, 31.5.1999, p. 1.

155 Decision (EU) 2016/456 of the European Central Bank of 4 March 2016 concerning the terms and conditions for European Anti-Fraud Office investigations of the European Central Bank, in relation to the prevention of fraud, corruption and any other illegal activities affecting the financial interests of the Union (ECB/2016/3), OJ L 79, 30.3.2016, p. 34.

Access to ECB documents

The ECB's Decision on public access to ECB documents[156] is in line with the objectives and standards applied by other EU institutions and bodies with regard to public access to their documents. It enhances transparency, while at the same time taking into account the independence of the ECB and of the NCBs and ensuring the confidentiality of certain matters specific to the performance of the ECB's tasks. Owing to the ECB's new responsibilities in the field of banking supervision, the number and complexity of requests from citizens and national authorities for access to documents have increased substantially.

In February 2016, as part of its commitment to transparency and accountability, the ECB began publishing the meeting calendars of each of the Executive Board members and of the Chair of the Supervisory Board with a three-month lag.

Compliance and Governance Office

Reporting directly to the President of the ECB, the Compliance and Governance Office (CGO) supports the Executive Board in protecting the integrity and reputation of the ECB, promotes ethical standards of behaviour and strengthens the ECB's accountability and transparency. To enhance both the overall coherence and the effectiveness of the ECB corporate governance framework, the CGO moreover provides the secretariat to the ECB Audit and Ethics Committees and acts as the liaison point for the European Ombudsman and OLAF.

[156] Decision ECB/2004/3 of 4 March 2004 on public access to European Central Bank documents, OJ L 80, 18.3.2004, p. 42.

2 Eurosystem/ESCB committees

The Eurosystem/ESCB committees have continued to play an important role in assisting the ECB's decision-making bodies in the performance of their tasks. At the request of both the Governing Council and the Executive Board, the committees have provided expertise in their fields of competence and have facilitated the decision-making process. Membership of the committees is usually restricted to staff of the Eurosystem central banks. However, the NCBs of the Member States which have not yet adopted the euro take part in the meetings of a committee whenever it deals with matters that fall within the field of competence of the General Council. In addition, some of the committees meet in an SSM composition (i.e. one member from the central bank and one member from the national competent authority of each participating Member State) when they assist the ECB in its work on policy issues related to the prudential supervision of credit institutions. Representatives of other competent bodies may also be invited to committee meetings whenever it is deemed appropriate.

Eurosystem/ESCB committees, the Budget Committee, the Human Resources Conference and their chairpersons (as at 1 January 2017)

Accounting and Monetary Income Committee (AMICO) Roberto Schiavi	Market Operations Committee (MOC) Ulrich Bindseil
Banknote Committee (BANCO) Ton Roos	Monetary Policy Committee (MPC) Wolfgang Schill
Committee on Controlling (COMCO) Nathalie Aufauvre	Organisational Development Committee (ODC) Steven Keuning
Eurosystem/ESCB Communications Committee (ECCO) Christine Graeff	Market Infrastructure and Payments Committee (MIPC) Marc Bayle
Financial Stability Committee (FSC) Vítor Constâncio	Risk Management Committee (RMC) Carlos Bernadell
Information Technology Committee (ITC) Koenraad de Geest	Statistics Committee (STC) Aurel Schubert
Internal Auditors Committee (IAC) Klaus Gressenbauer	Budget Committee (BUCOM) Sharon Donnery
International Relations Committee (IRC) Frank Moss	Human Resources Conference (HRC) Anne-Sylvie Catherin
Legal Committee (LEGCO) Chiara Zilioli	

Two further committees exist. The Budget Committee assists the Governing Council in matters related to the ECB's budget. The Human Resources Conference is a forum for the exchange of experience, expertise and information among Eurosystem/ESCB central banks in the field of human resources management.

3 Organisational and human resources developments

Organisational chart of the ECB (as at 1 January 2017)

Directorate General Administration
Werner Studener
Deputy: Klaus Riemke
Divisions:
· Administrative Services
· Premises
· Security & Safety

Directorate Banknotes
Ton Roos
Divisions:
· Currency Development
· Currency Management

Directorate General Communications
Christine Graeff
Deputy: Thierry Bracke
Deputy: Cornelia Lotze
Divisions:
· Global Media Relations
· Language Services
· Outreach
· Web & Digital

Counsel to the Executive Board
Frank Smets

Directorate General Economics
Wolfgang Schill
Deputy: Hans-Joachim Klöckers
Directorate Economic Developments
Hans-Joachim Klöckers
Divisions:
· Convergence & Competitiveness
· Country Surveillance
· Fiscal Policies
· Output & Demand
· Prices & Costs
Directorate Monetary Policy
Massimo Rostagno
Divisions:
· Capital Markets/Financial Structure
· Monetary Analysis
· Monetary Policy Strategy

ESRB Secretariat
Francesco Mazzaferro[2]
Deputy: Tuomas Peltonen

Directorate General Finance
Roberto Schiavi
Deputy: Claudia Mann
Divisions:
· Accounting
· Budgeting & Controlling
· Central Procurement
· Financial Reporting

Directorate General Human Resources
Anne-Sylvie Catherin
Deputy: Peter Rennpferdt
Divisions:
· Business Partnering
· Employee Services
· Talent Management

Directorate General Information Systems
Koenraad de Geest
Deputy: Magí Clavé Badia
Deputy: Dirk Robijns
Divisions:
· Analytical Domain Applications
· Enterprise Systems
· Executional Domain Applications
· Infrastructure & Operations
· IT Governance & Business Relations
· Security & Architecture

Directorate Internal Audit
Klaus Gressenbauer
Divisions:
· Audit Missions 1
· Audit Missions 2

Directorate General International & European Relations
Frank Moss
Deputy: Gilles Noblet
Divisions:
· ECB Representative Office in Brussels
· ECB Representation in Washington, D.C.
· EU Institutions & Fora
· External Developments
· International Policy Analysis
· International Relations & Cooperation

Directorate General Legal Services
Chiara Zilioli
Deputy: Christian Kroppenstedt
Deputy: Roberto Ugena
Divisions:
· Financial Law
· Institutional Law[3]
· Legislation
· Supervisory Law

Directorate General Macroprudential Policy & Financial Stability
Sergio Nicoletti Altimari
Deputy: John Fell
Divisions:
· Financial Regulation
· Financial Stability Surveillance
· Macro-Financial Linkages
· Macro-Financial Policies

Directorate General Market Infrastructure & Payments
Marc Bayle
Deputy: Pierre Petit
Divisions:
· Market Infrastructure Development
· Market Infrastructure Management
· Market Integration
· Oversight

Directorate General Market Operations
Ulrich Bindseil
Deputy: Cornelia Holthausen
Deputy: Torsti Silvonen
Divisions:
· Bond Markets & International Operations
· Financial Operations Services
· Market Operations Analysis
· Market Operations Systems
· Money Market & Liquidity

Directorate General Research
Luc Laeven
Deputy: Philipp Hartmann
Divisions:
· Financial Research
· Monetary Policy Research

Directorate Risk Management
Carlos Bernadell
Divisions:
· Risk Analysis
· Risk Strategy

Directorate General Secretariat
Pedro Gustavo Teixeira[4]
Divisions:
· Information Management Services
· Secretariat
- **Compliance and Governance Office**
Roman Schremser[5]

Directorate General Statistics
Aurel Schubert
Deputy: Werner Bier
Divisions:
· External Statistics
· Macroeconomic Statistics
· Monetary & Financial Statistics
· Statistical Information Services
· Statistics Development/ Coordination
· Supervisory Statistics

Directorate Secretariat to the Supervisory Board
Petra Senkovic

Directorate General Microprudential Supervision I
Stefan Walter
Deputy: Patrick Amis
Deputy: Margarita Delgado
Divisions:
· Significant Bank Supervision I
· Significant Bank Supervision II
· Significant Bank Supervision III
· Significant Bank Supervision IV
· Significant Bank Supervision V
· Significant Bank Supervision VI
· Significant Bank Supervision VII

Directorate General Microprudential Supervision II
Ramón Quintana
Deputy: Paolo Corradino
Deputy: Rolf Klug
Divisions:
· Significant Bank Supervision VIII
· Significant Bank Supervision IX
· Significant Bank Supervision X
· Significant Bank Supervision XI
· Significant Bank Supervision XII
· Significant Bank Supervision XIII
· Significant Bank Supervision XIV
· Significant Bank Supervision XV

Directorate General Microprudential Supervision III
Jukka Vesala
Deputy: Linette Field
Divisions:
· Analysis & Methodological Support
· Institutional & Sectoral Oversight
· Supervisory Oversight & NCA Relations

Directorate General Microprudential Supervision IV
Korbinian Ibel
Deputy: François-Louis Michaud
Deputy: Giuseppe Siani
Divisions:
· Authorisation
· Centralised On-site Inspections
· Crisis Management
· Enforcement & Sanctions
· Internal Models
· Methodology & Standards Development
· Planning & Coordination of SEP
· SSM Risk Analysis
· Supervisory Policies
· Supervisory Quality Assurance

1) Reports to the Executive Board via the President.
2) Reports to the President in his capacity as Chair of the European Systemic Risk Board.
3) Includes the data protection function.
4) Secretary to the Executive Board, the Governing Council and the General Council.
5) Reports to the Executive Board via the President on compliance matters.

ECB human resources

A Chief Services Officer (CSO) was appointed in January 2016. This new role was created to further strengthen operational and analytical excellence, to improve organisational efficiency and to better facilitate the collaboration and orientation of support functions towards the needs of the ECB overall. Furthermore, the CSO, whose responsibilities include the administration and information systems areas, prioritised the development of a more holistic strategic planning process, further fostering collaboration across the CSO business areas and all other business areas.

The creation of a new business area in charge of all finance-related matters in April 2016 enabled the restructured human resources (HR) function to focus fully on delivering high-quality HR services, so that ECB employees can develop their potential within a modern and agile organisational structure. Attracting and retaining talented staff and managing their performance is a priority. In addition, the ECB's HR services place particular emphasis on ensuring the health and well-being of ECB staff.

During 2016 the foundations were laid for enhancing the strategic Business Partner function to strengthen the ECB's management of people issues, as well as for translating business requirements into HR policy needs.

Strengthening the Bank's capabilities to manage talent and develop leadership and fostering a culture of excellence in terms of professional ethics and long-term organisational sustainability were also high on the ECB's HR agenda in 2016. A particular focus was placed on the development of a Leadership Growth Programme, which will be implemented gradually in the course of 2017 and 2018, the implementation of a "healthy leading" programme, and support for the ECB's recently established Compliance and Governance Office in developing compulsory training on ethics.

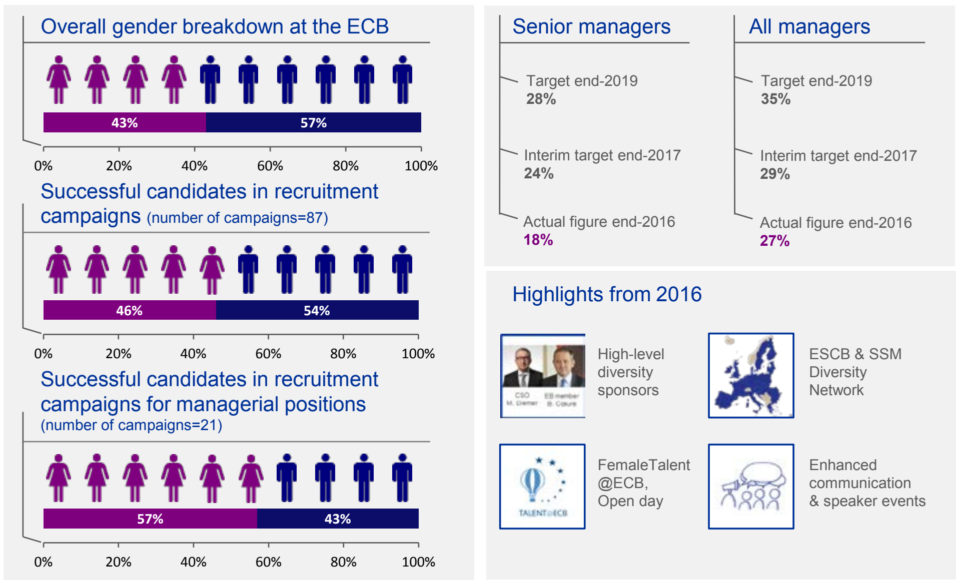
In addition, a number of HR initiatives aimed at strengthening the European banking supervision function were implemented. These included the further strategic development of a system-wide Single Supervisory Mechanism curriculum for supervision training (attended by over 1,900 participants), the organisation of 28 team-building events to reinforce cross-country collaboration in Joint Supervisory Teams and the successful integration of the first cohort of 33 young graduates selected for the European banking supervision traineeship programme, who have successfully completed their induction, training course and placements at national competent authorities.

In 2016 the ECB continued its efforts to enhance gender diversity especially among its leadership ranks. Having achieved a share of 27% of women in management-level positions and 18% of women in senior management-level positions at the end of 2016, the ECB is now striving to achieve its interim and final targets for 2017 and 2019 respectively (see Figure 3). Since the introduction of the gender targets in June 2013, alongside a dedicated action plan, the topic of gender diversity has been high on the ECB's agenda as the organisation aims to identify, attract and develop female talent. In addition, the ECB implemented further diversity measures in 2016, including high-level sponsorship from Executive Board member Benoît Cœuré and the CSO, an open day for female talent focusing on university students, and the establishment of an ESCB and SSM Diversity Network.

Beyond gender, the ECB is committed to fostering all facets of diversity in order to establish an inclusive working culture building on shared responsibility among the sponsors, the ECB's Diversity Ambassadors, the Directorate General Human Resources, the wider management community and the existing diversity networks, such as the Female Network, the Rainbow Network and the ECB Ethnic and Cultural Group.

Figure 3

Gender targets and levels at the ECB (data as at 31 December 2016)



Source: ECB.

On 31 December 2016 the ECB had 2,898.5 full-time equivalent approved headcount positions, compared with 2,650 positions at the end of 2015. The number of actual full-time equivalent staff holding employment contracts with the ECB stood at 3,171 (compared with 2,871 on 31 December 2015).[157] A total of 208 new fixed-term contracts (limited in nature or convertible to permanent contracts) were offered in 2016. In addition, 304 short-term contracts were issued, as well as a number of contract extensions, to cover absences of less than one year. Throughout 2016 the ECB continued to offer short-term contracts for periods of up to 36 months to staff from NCBs and international organisations. On 31 December 2016 250 employees from NCBs and international organisations were working at the ECB on various assignments, 11% more than at the end of 2015. In September 2016 the ECB welcomed 14 participants in the 11th intake into its Graduate Programme and, on 31 December 2016, 320 trainees were being hosted by the ECB (17% more than in

157 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.

2015). The ECB also awarded five fellowships as part of the Wim Duisenberg Research Fellowship Programme, which is open to leading economists, and six fellowships to young researchers under its Lamfalussy Fellowship Programme.

While the organisation grew slightly in size, 56 members of staff employed on a fixed-term or permanent basis resigned or retired in 2016 (compared with 53 in 2015), and 317 short-term contracts expired in the course of the year.

Annual Accounts

2016

Management report for the year ending 31 December 2016

1 Purpose of the ECB's management report

The ECB is part of the Eurosystem, the primary objective of which is to maintain price stability. The ECB's main tasks, as described in the Statute of the ESCB, comprise the implementation of the monetary policy of the European Union, 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.

Moreover, the ECB is 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.

Given that the ECB's activities and operations are undertaken in support of its policy objectives, its financial result should be viewed in conjunction with its policy actions. In this respect, the management report is an integral part of the ECB's Annual Accounts as it provides readers with contextual information on the business of the ECB and the impact of the ECB's key activities and operations on its risks and financial statements.[1]

Furthermore, this report provides information on the ECB's financial resources, as well as on the key processes related to the production of its financial statements.

2 Key processes and functions

The ECB's internal processes ensure the quality and accuracy of the information included in its financial statements. Moreover, a number of key functions are involved in implementing policy decisions, which have a significant influence on the reported figures.

2.1 Controls within organisational units

Within the ECB's internal control structure, each business area is responsible for managing its own operational risks and implementing controls to ensure the effectiveness and efficiency of its operations and the accuracy of the information to

[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.

be included in the financial statements of the ECB. The implementation of the budget also falls primarily under the responsibility and accountability of the individual business areas.

2.2 Budgetary processes

The Budgeting and Controlling Division (BCO) of the Directorate General Finance develops, prepares and monitors the budget in line with the strategic priorities set by the Governing Council and the Executive Board. These tasks are carried out in cooperation with the business areas, while applying the separation principle.[2] BCO also provides planning and resource controlling, cost-benefit analysis and investment analysis for ECB projects and contributes to these processes for ESCB projects in line with the agreed frameworks. Expenditure against agreed budgets is monitored at regular intervals by the Executive Board, taking into account the advice of BCO under the guidance of the Chief Services Officer (CSO), and by the Governing Council, with the assistance of the Budget Committee (BUCOM). In accordance with Article 15 of the ECB's Rules of Procedure, BUCOM supports the Governing Council by evaluating the ECB's annual budget proposals and the Executive Board's requests for supplementary budget funding, prior to their submission to the Governing Council for approval.

2.3 Portfolio management

The ECB holds euro-denominated securities for monetary policy purposes, acquired in the context of the Securities Markets Programme (SMP), the asset-backed securities purchase programme (ABSPP), the public sector purchase programme (PSPP), and the three covered bond purchase programmes (CBPPs).[3] The purpose of the purchase programmes[4] is the further easing of monetary and financial conditions, thereby contributing to a return of inflation rates towards levels below, but close to, 2% over the medium term. Purchases under these programmes are based on the Governing Council's decisions on the overall monthly Eurosystem purchases and are subject to predetermined eligibility criteria.

Furthermore, the ECB has a foreign reserves portfolio, which consists of US dollars, Japanese yen, gold and special drawing rights, and an own funds investment portfolio denominated in euro.

The purpose of the ECB's foreign reserves is to finance potential interventions in the foreign exchange market. This purpose determines the high-level portfolio

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2 The separation principle refers to the requirement laid down in the SSM Regulation for the ECB to carry out its supervisory tasks without prejudice to and separately from its tasks relating to monetary policy and any other tasks.

3 The ECB does not hold assets acquired under the corporate sector purchase programme (CSPP), which started on 8 June 2016. Purchases under the CSPP are conducted by six NCBs on behalf of the Eurosystem.

4 The ECB currently purchases securities under the third CBPP, the ABSPP and PSPP. Purchases under the first two CBPPs and the SMP have been terminated.

management objectives, which are, in order of priority, liquidity, safety and return. The investment of the ECB's foreign reserves is managed by a central risk management function while investment operations are conducted in a decentralised manner. For the US dollar and Japanese yen portfolios, a strategic benchmark portfolio is decided upon by the Governing Council, following a proposal from the risk management function of the ECB. Subsequently, the ECB's portfolio managers devise the tactical benchmark portfolios. Based on those portfolios, actual positions are implemented by portfolio managers at the national central banks (NCBs).

The purpose of the ECB's own funds portfolio of euro-denominated assets is to provide income to help fund the ECB's operating expenses which are not related to the performance of its supervisory tasks.[5] In this context, the objective of the management of the own funds portfolio is to maximise returns, subject to a number of risk limits.

In addition, funds relating to the ECB's pension plans are invested in an externally managed portfolio.

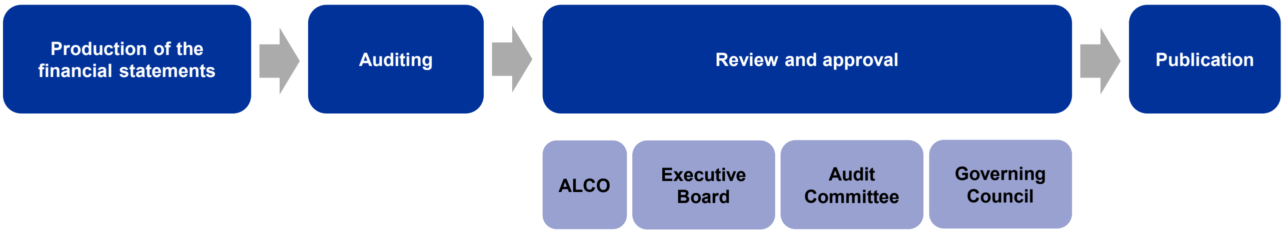
2.4 Financial risk oversight functions

The ECB's Directorate Risk Management proposes policies and procedures that ensure an appropriate level of protection against financial risks for the ECB in connection with its monetary policy securities portfolios, foreign reserves portfolio and euro-denominated own funds investment portfolio. Furthermore, the Risk Management Committee (RMC), which comprises experts from Eurosystem central banks, assists the decision-making bodies in ensuring an appropriate level of protection for the Eurosystem, including the ECB. This is achieved by managing and controlling the financial risks originating from market operations. With regard to these activities, the RMC contributes, inter alia, to the monitoring, measuring and reporting of financial risks on the balance sheet of the Eurosystem, including the ECB, and the definition and review of the associated methodologies and frameworks.

2.5 Production of the ECB's financial statements

The financial statements of the ECB are drawn up in accordance with the principles established by the Governing Council. The production and the approval process for the ECB's financial statements prior to their publication is illustrated in the chart below.

5 The expenditure incurred by the ECB in the performance of its supervisory tasks is recovered via annual fees levied on supervised entities.



The Financial Reporting Division of the Directorate General Finance is responsible for producing the financial statements in cooperation with other business areas and for ensuring that all related documentation is made available in a timely manner to the auditors and to the decision-making bodies.

The financial statements of the ECB are audited by independent external auditors recommended by the Governing Council and approved by the EU Council.[6] The responsibility of the external auditors is to express an opinion as to whether the financial statements give a true and fair view of the financial position of the ECB and of the results of its operations, in accordance with the accounting policies established by the Governing Council. In this regard, the external auditors examine the books and accounts of the ECB, evaluate the adequacy of internal controls applied to the preparation and presentation of the financial statements and assess the appropriateness of the accounting policies used.

The financial reporting processes and the ECB's financial statements may also be subject to internal audits. All reports by the Directorate Internal Audit, which may include recommendations addressed to the business areas concerned, are submitted to the Executive Board.

The ECB's Assets and Liabilities Committee (ALCO), which is composed of representatives from various business areas of the ECB, systematically monitors and assesses all factors that may have an impact on the ECB's Balance Sheet and Profit and Loss Account. It reviews the financial statements and the related documentation before they are submitted to the Executive Board for endorsement.

After the Executive Board has authorised their issuance, the financial statements, together with the external auditor's opinion and all relevant documentation, are submitted to the Audit Committee[7] for review prior to their approval by the Governing Council. The Audit Committee provides assistance to the Governing Council regarding its responsibilities concerning, inter alia, the integrity of financial information and the oversight of internal controls. In this context, the Audit Committee assesses the ECB's financial statements and considers whether they provide a true and fair view and were drawn up in accordance with approved accounting rules. It also reviews any significant accounting or financial reporting issue that could have an impact on the ECB's financial statements.

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6 In order to reinforce public assurance as to the independence of the ECB's external auditors, the principle of audit firm rotation every five years is applied.

7 The Audit Committee is composed of five members: the Vice-President of the ECB, two senior governors of euro area NCBs and two external members, chosen from among high-ranking officials with experience in central banking.

The ECB’s financial statements, management report and note on profit distribution/allocation of losses are approved by the Governing Council in February of each year and published immediately thereafter, together with the auditor’s report.

3 Risk management

Risk management is a critical part of the ECB’s activities and is conducted through a continuous process of risk identification, assessment, mitigation and monitoring. The table below presents the main risks to which the ECB is exposed, as well as their sources and the applicable risk control frameworks. The subsequent sections provide further details.

Risks to which the ECB is exposed

Risk	Component	Type of risk	Source of risk	Risk control framework
Financial risks	Credit risk[1]	Credit default risk	• foreign reserves holdings • euro-denominated investment portfolio • monetary policy securities holdings	• eligibility criteria • exposure limits • diversification • collateralisation • financial risk monitoring
		Credit migration risk	• foreign reserves holdings • euro-denominated investment portfolio	
	Market risk	Currency and commodity risks[2]	• foreign reserves holdings • gold holdings	• diversification • revaluation accounts • financial risk monitoring
		Interest rate risk[3] (i) decline in market values	• foreign reserves holdings • euro-denominated investment portfolio	• market risk limits • asset allocation policies • revaluation accounts • financial risk monitoring
		(ii) reduction in net interest income	• ECB's Balance Sheet as a whole	• asset allocation policies • financial risk monitoring
	Liquidity risk[4]		• foreign reserves holdings	• asset allocation policies • liquidity limits • financial risk monitoring
Operational risk[5]			• workforce, personnel resourcing, personnel policies • internal governance and business processes • systems • external events	• identifying, assessing, responding, reporting and monitoring operational risks • operational risk management framework including risk tolerance policy • business continuity management framework • crisis management framework

1) **Credit risk** is the risk of incurring financial losses owing to a "default event" which stems from the failure of an obligor (counterparty or issuer) to meet its financial obligations in a timely manner or a re-pricing of financial assets following a deterioration in their credit quality and ratings.
2) **Currency and commodity risks** are risks of incurring financial losses on (a) positions denominated in foreign currency, owing to fluctuations in exchange rates, and (b) on holdings of commodities, owing to fluctuations in their market prices.
3) **Interest rate risk** is the risk of incurring financial losses as a result of adverse changes in interest rates giving rise to (i) a mark-to-market decline in the value of financial instruments or (ii) a negative impact on net interest income.
4) **Liquidity risk** is the risk of incurring financial losses owing to the inability to liquidate an asset at its prevailing market value within an appropriate time frame.
5) **Operational risk** is 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).

3.1 Financial risks

Financial risks arise from the ECB's core activities and associated exposures. The ECB decides its asset allocation and implements appropriate risk management frameworks, taking into account the objectives and purposes of the various portfolios and the financial exposures, as well as the risk preferences of its decision-making bodies.

Financial risks can be quantified using a variety of risk measures. The ECB applies risk estimation techniques developed in-house, which rely on a joint market and credit risk simulation framework. The core modelling concepts, techniques and assumptions underlying the risk measures draw on market standards and available market data.

In order to obtain a comprehensive understanding of potential risk events that could occur at different frequencies with different degrees of severity, and to avoid reliance on a single risk measure, the ECB uses mainly two types of statistical risk measure, Value at Risk (VaR) and Expected Shortfall (ES),[8] estimated at different confidence levels, over a one-year horizon. These risk measures do not consider (i) the liquidity risk of the ECB's portfolios, particularly its foreign reserves holdings, and (ii) the long-term risk of reductions in the net interest income earned by the ECB. For this reason, and to better understand and complement these statistical risk estimates, the ECB also regularly performs sensitivity and stress scenario analyses and longer-term projections of exposures and income.

As at 31 December 2016 the financial risks for all the ECB's portfolios combined, as measured by the VaR at a 95% confidence level over a one-year horizon, stood at €10.6 billion, which was €0.6 billion higher than the risks estimated as at 31 December 2015. This rise is mainly due to the increase in the value of the ECB's gold holdings resulting from the rise in the price of gold in 2016. The additional risk is mitigated by an increase in the respective revaluation accounts.

3.1.1 Credit risk

The risk control frameworks and limits that the ECB uses to manage its credit 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 credit risk arising from the ECB's foreign reserves holdings is low, as the reserves are invested in assets with a high credit quality.

The purpose of the euro-denominated own funds portfolio is to provide the ECB with income to help fund its operating expenses which are not related to the performance of its supervisory tasks, while preserving the invested capital. Return considerations therefore play a relatively greater role in the asset allocation and risk control framework for these holdings than they do for the ECB's foreign reserves portfolio. Notwithstanding, the credit risk in respect of these holdings is kept at low levels.

8 VaR is defined as the maximum loss that, according to a statistical model, will not be exceeded with a given probability (confidence level). ES is defined as a probability-weighted average loss in the scenarios that exceed the VaR threshold with a given confidence level.

The securities acquired for monetary policy purposes are valued at amortised cost subject to impairment, therefore, any credit migration associated with these securities does not directly affect the financial statements of the ECB. However, these securities are still subject to credit default risk, which is kept within the risk tolerance levels of the ECB by means of the applied risk management framework.

3.1.2 Market risk

In managing its holdings, the main types of market risk to which the ECB is exposed are currency and commodity (gold price) risks. The ECB is also exposed to interest rate risk.

Currency and commodity risks

Currency and commodity risks dominate the ECB's financial risk profile. This is due to the size of its foreign reserves (mainly comprising US dollars) and gold holdings, as well as the high degree of volatility in exchange rates and gold prices.

In view of the policy role of gold and foreign reserves, the ECB does not seek to eliminate currency and commodity risks. These risks are in effect mitigated by the diversification of the holdings across different currencies and gold.

In line with the Eurosystem rules, the gold and US dollar revaluation accounts, which amounted to €13.9 billion (2015: €11.9 billion) and €12.0 billion (2015: €10.6 billion) respectively as at 31 December 2016, can be used to absorb the impact of future unfavourable movements in gold prices and the US dollar exchange rate, thereby mitigating or even preventing any impact on the ECB's Profit and Loss Account.

Interest rate risk

The ECB's foreign reserves and euro-denominated own funds portfolios are mainly invested in fixed income securities. These securities are revalued at market prices and are therefore exposed to market risk arising from interest rate movements. This mark-to-market interest rate risk is managed through asset allocation policies and market risk limits.

The interest rate risk arising from the ECB's foreign reserves holdings is low, as these reserves are mainly invested in assets with relatively short maturities in order to preserve at all times the market value of the foreign reserves, which are held for possible intervention purposes. As this is not such a major consideration for the euro-denominated own funds portfolio, the assets in this portfolio generally have longer maturities, resulting in a higher, but still limited, level of interest rate risk.

The ECB is also exposed to the risk of a mismatch 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, rather it is linked to the structure of the ECB's Balance Sheet as a whole, particularly the existence of maturity and yield mismatches between assets and liabilities. Asset allocation policies, including policies and procedures that ensure that purchases are conducted at appropriate prices, are used to manage this type of risk, subject to monetary policy considerations. It is further mitigated by the existence of unremunerated liabilities on the ECB's Balance Sheet.

The ECB monitors this risk by carrying out a forward-looking analysis of its profitability. This analysis reveals 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 as a result of the ongoing monetary policy asset purchase programmes.

3.1.3 Liquidity risk

Owing to the role of the euro as a major reserve currency, the ECB's role as a central bank and its asset and liability structure, the ECB's main exposure to liquidity risk stems from its foreign reserves. This is because large amounts of these holdings may need to be liquidated within short periods of time, in order to carry out foreign exchange interventions. To manage this risk, asset allocation policies and limits ensure that a sufficiently large share of the ECB's holdings is invested in assets that can be liquidated quickly with a negligible impact on the price.

In 2016 the liquidity risk of the ECB's portfolios continued to be low.

3.2 Operational risk

The main objectives of the ECB's operational risk management (ORM) framework are (a) to contribute to ensuring that the ECB achieves its mission and objectives, and (b) to protect its reputation and other 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 and controls. Business areas with a transversal role provide specific controls at a bank-wide level. 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 risk matrix based on the ECB's impact and likelihood grading scales (which apply quantitative and qualitative criteria).

The ORM/BCM Section under the CSO is responsible for maintaining the ORM and business continuity management (BCM) frameworks and for providing methodological assistance in respect of ORM and BCM activities to risk and control owners. Moreover, it provides annual and ad hoc reports on operational risks to the Operational Risk Committee and the Executive Board, and it supports the decision-making bodies in their oversight role regarding the management of the ECB's operational risks and controls. It coordinates the BCM programme, the regular business continuity tests and reviews of business continuity arrangements for the

ECB's time-critical operations. Finally, it supports the Crisis Management Team, including its support structures, as well as business areas, in (exceptional) situations that have the potential to develop into an operational crisis.

4 Financial resources

The ECB's financial resources are (i) invested in assets that generate income, and/or (ii) used to directly offset losses materialising from financial risks. These financial resources consist of capital, the general risk provision, revaluation accounts and the net income for the year.

Capital

The ECB's paid-up capital amounted to €7,740 million on 31 December 2016. Detailed information is provided in note 15.1, "Capital", in the notes on the Balance Sheet.

Provision for foreign exchange rate, interest rate, credit and gold price risks

In view of the ECB's considerable exposure to financial risks as described in Section 3.1, the ECB maintains a provision for foreign exchange rate (currency), interest rate, credit and gold price (commodity) risks. The size of and continuing requirement for this provision is reviewed annually, taking a range of factors into account, including the level of holdings of risk-bearing assets, projected results for the coming year and a risk assessment. This risk assessment is described in Section 3.1 and is applied consistently over time. The risk provision, together with any amounts held in the ECB's general reserve fund, may not exceed the value of the capital paid up by the euro area NCBs.

As at 31 December 2016 the provision for foreign exchange rate, interest rate, credit and gold price risks amounted to €7,620 million, which is equal to the value of the ECB's capital paid up by the euro area NCBs as at that date.

Revaluation accounts

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. These balances can be used to absorb the impact of any future unfavourable movement in the respective prices and/or exchange rates, and therefore strengthen the ECB's resilience to the underlying risks.

The total amount of revaluation accounts for gold, foreign currencies and securities as at the end of December 2016 stood at €28.8 billion[9] (2015: €25.0 billion). For further information, see the notes on accounting policies and note 14, “Revaluation accounts”, in the notes on the Balance Sheet.

Net income

The net income resulting from the ECB’s assets and liabilities in a given financial year could be used to absorb potential losses incurred in the same year if financial risks materialise. Thus, net income contributes to safeguarding the ECB’s net equity.

Developments in the ECB’s financial resources

Chart 1 presents the evolution of the above-mentioned financial resources of the ECB and of the main foreign exchange rates and gold prices for the period 2008-16. During this period (a) the paid-up capital of the ECB almost doubled as a result of the decision taken by the Governing Council in 2010 to increase the subscribed capital; (b) the risk provision rose to an amount equal to the paid-up capital of the euro area NCBs; (c) the revaluation accounts exhibited a notable degree of volatility, which was mainly due to movements in foreign exchange rates and the price of gold; and (d) the net profit ranged from €0.2 billion to €2.3 billion and was influenced by a number of factors, such as the transfers to the ECB’s risk provision, developments in interest rates and the monetary policy-related securities purchases.

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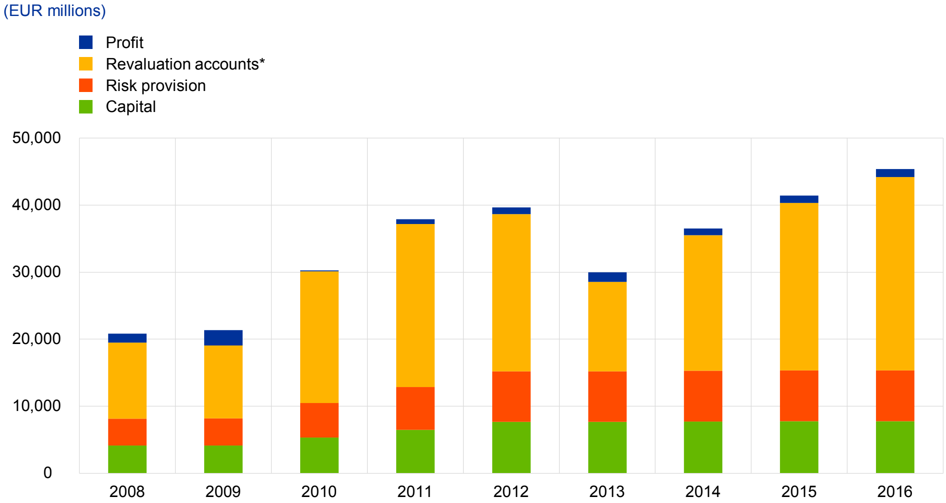
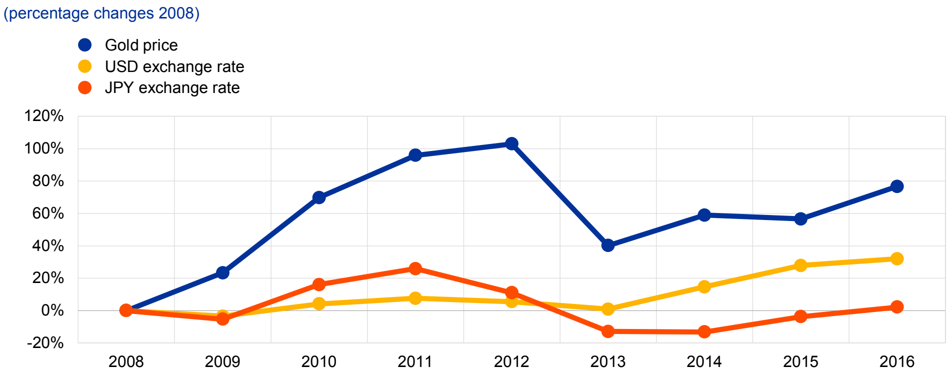
9 In addition, the balance sheet item “Revaluation accounts” includes remeasurements in respect of post-employment benefits.

Chart 1

The ECB's financial resources, the main foreign exchange rates and gold prices[10] over the period 2008-16





Source: ECB.
* This includes total revaluation gains on gold, foreign currency and securities.

5 The impact of key activities on the financial statements

The table 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. The full extent of the Eurosystem's monetary policy operations is reflected in the ECB's financial statements, together with those of the euro area NCBs, reflecting the principle of decentralised implementation of monetary policy in the Eurosystem.

10 Developments in the main foreign exchange rates and the price of gold are presented as the percentage change compared with the exchange rates and the price of gold prevailing at the end of 2008.

Operation/Function	Impact on the ECB's financial statements
Monetary policy operations	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 on the ECB's Balance Sheet.
Securities held for monetary policy purposes (under the CBPPs, SMP, ABSPP and PSPP)[11]	Securities purchased for monetary policy purposes are recorded under the balance sheet item "Securities held for monetary policy purposes". Holdings in these portfolios are accounted for at amortised cost and an impairment test is conducted at least annually. Coupon accruals and amortised premiums and discounts are included in the Profit and Loss Account.[12]
Investment activities (management of foreign reserves and own funds)	The ECB's foreign reserves are presented on-balance sheet[13] or are reflected in off-balance-sheet accounts until the settlement date. 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.[14] 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 securities, are also included in the Profit and Loss Account.[15] Unrealised gains are recorded on-balance sheet under the item "Revaluation accounts".
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/liabilities within the Eurosystem" and have no impact on the ECB's Profit and Loss Account.
Payment systems (TARGET2)	Intra-Eurosystem balances of euro area NCBs vis-à-vis the ECB arising from TARGET2 are presented on the Balance Sheet of the ECB as a single net asset or liability position. The remuneration of those balances is included in the Profit and Loss Account under the items "Other interest income" and "Other interest expense".
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".
Banking supervision	The annual costs 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".

6 Financial result for 2016

In 2016 the ECB's net profit was €1,193 million (2015: €1,082 million).

Chart 2 presents the components of the ECB's Profit and Loss Account in 2016 and a comparison with 2015.

11 The ECB does not purchase securities under the corporate sector purchase programme.

12 Reported on a net basis under either "Other interest income" or "Other interest expense", depending on whether the net amount is positive or negative.

13 Mainly recorded under "Gold and gold receivables", "Claims on non-euro area residents denominated in foreign currency", "Claims on euro area residents denominated in foreign currency" and "Liabilities to non-euro area residents denominated in foreign currency".

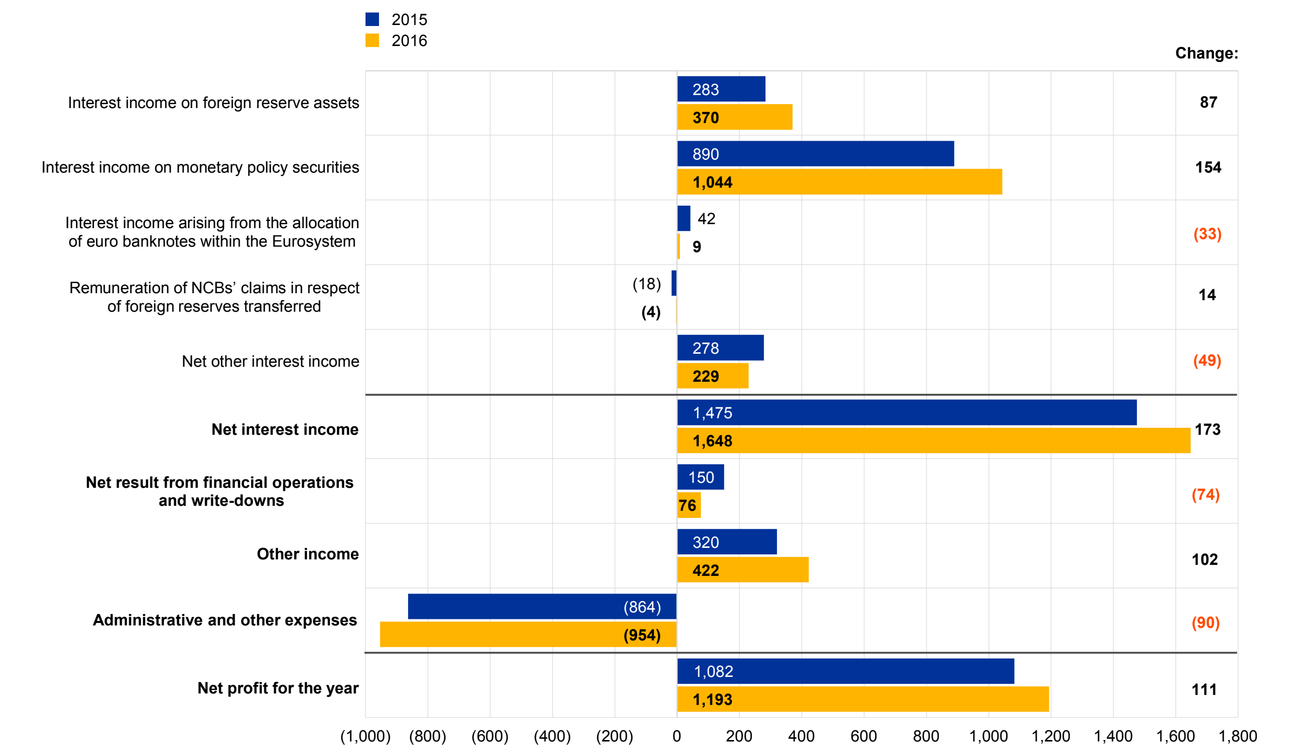
14 Income related to the ECB's foreign reserves is disclosed under the item "Interest income on foreign reserve assets", while the interest income and expenses on its own funds are reflected in "Other interest income" and "Other interest expense".

15 Recorded under the items "Write-downs on financial assets and positions" and "Realised gains/losses arising from financial operations", respectively.

Chart 2

Breakdown of the ECB's Profit and Loss Account in 2016 and 2015

(EUR millions)



Source: ECB.

Highlights

- Interest income on foreign reserve assets increased by €87 million mainly as a result of the higher interest income earned on securities denominated in US dollars.

- Interest income on securities purchased for monetary policy purposes increased from €890 million in 2015 to €1,044 million in 2016. The reduction in income owing to the maturing of securities purchased under the SMP and the first and second CBPPs was more than offset by income arising from the asset purchase programme (APP).[16]

- Interest income on the ECB's share of the total euro banknotes in circulation and interest expense payable to the NCBs in respect of foreign reserves transferred fell by €33 million and €14 million respectively, as a result of the lower average rate on the main refinancing operations in 2016.

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16 The APP consists of the CBPP3, ABSPP, PSPP and the corporate sector purchase programme (CSPP). The ECB does not purchase securities under the CSPP. Further details on the APP can be found on the ECB's website.

- Net other interest income decreased, mainly owing to the lower interest income on the own funds portfolio resulting from the low-yield environment in the euro area.

- The net result of financial operations and write-downs on financial assets decreased by €74 million, mainly owing to the higher year-end write-downs stemming from the overall decrease in the market prices of securities held in the US dollar portfolio.

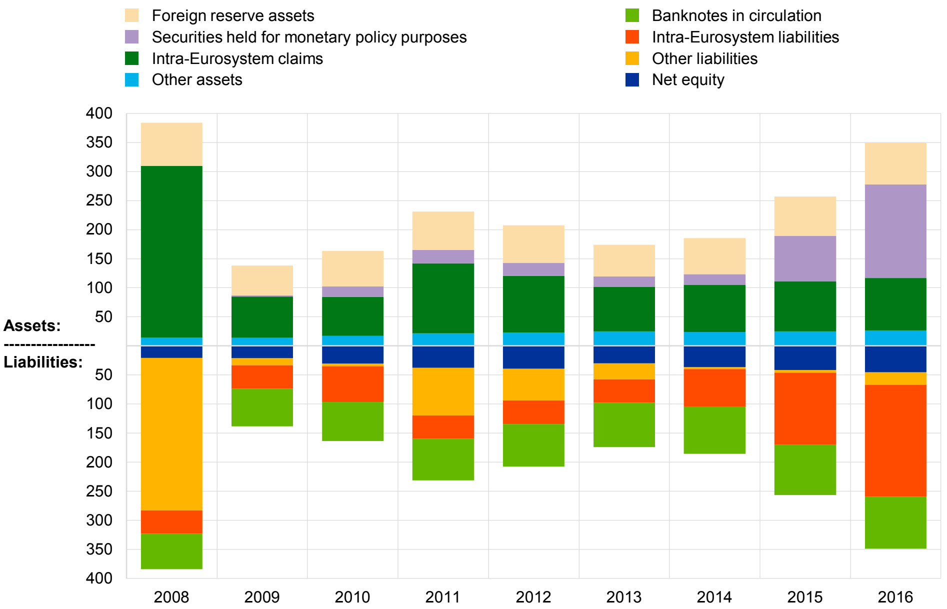
- The total administrative expenses of the ECB, including depreciation, amounted to €954 million, compared with €864 million in 2015. This increase was due to higher costs incurred in connection with the Single Supervisory Mechanism (SSM). The full SSM-related costs are recovered via fees charged to the supervised entities. As a result, other income increased to €422 million (2015: €320 million).

7 Long-term developments in the ECB's financial statements

Charts 3 and 4 present the evolution of the Balance Sheet and Profit and Loss Account of the ECB, as well as their components, over the period 2008-16.

Chart 3
Evolution of the ECB's Balance Sheet in the period 2008-16[17]

(EUR billions)



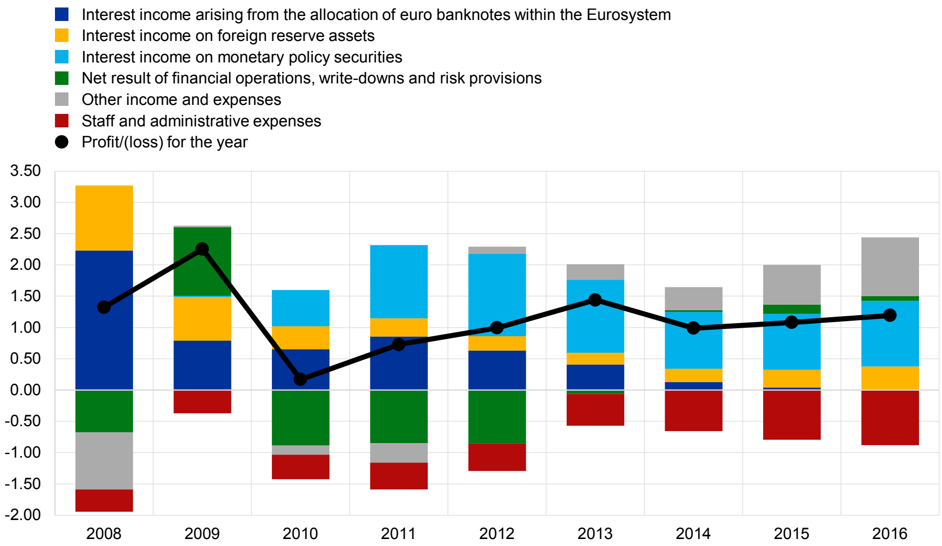
Source: ECB.

[17] The chart displays year-end values.

Chart 4

Evolution of the ECB's Profit and Loss Account in the period 2008-16

(EUR billions)



Source: ECB.

The contraction of the ECB's Balance Sheet in the period 2008-14 was mainly due to the improved US dollar funding conditions for Eurosystem counterparties and the resulting gradual reduction in US dollar liquidity-providing operations offered by the Eurosystem. This led to a reduction in the ECB's intra-Eurosystem claims and its other liabilities. In the fourth quarter of 2014 the ECB's Balance Sheet started to expand, triggered by the acquisition of covered bonds and asset-backed securities under the third covered bond purchase programme (CBPP3) and the ABSPP. This balance sheet expansion continued in 2015 and 2016, owing to the acquisition of securities issued by euro area central, regional or local governments and recognised agencies in connection with the PSPP. The securities purchased under all of these programmes were settled via TARGET2 accounts and therefore resulted in a corresponding increase in intra-Eurosystem liabilities.

The ECB's net profit over the same period was influenced by the following factors.

- The rate on the main refinancing operations decreased, significantly reducing the seigniorage income of the ECB. The average rate for 2016 was 0.01%, compared with 4% for 2008, and, as a result, the interest income on banknotes in circulation fell from €2.2 billion in 2008 to €0.01 billion in 2016.

- The general risk provision for foreign exchange rate, interest rate, credit and gold price risks was increased, particularly in the period 2010-12. In this period a cumulative amount of €3.5 billion was transferred to the risk provision, reducing the reported profits by an equal amount.

- Interest income earned on foreign reserve assets declined gradually from €1.0 billion in 2008 to €0.2 billion in 2013, mainly owing to the reduction in US dollar yields and the resulting decrease in interest income earned on the US dollar portfolio. However, this trend has been reversed over the past three years and in 2016 this income amounted to €0.4 billion.

- Security holdings acquired under the monetary policy asset purchase programmes have generated, on average, 57% of the ECB's overall net interest income since 2010.
- The establishment of the SSM in 2014 has contributed to a significant increase in staff and administrative expenses. However, the SSM-related costs are recovered annually via fees levied on the supervised entities.

Financial statements of the ECB

Balance Sheet as at 31 December 2016

ASSETS	Note number	2016 €	2015 €
Gold and gold receivables	1	**17,820,761,460**	**15,794,976,324**
Claims on non-euro area residents denominated in foreign currency	2		
Receivables from the IMF	2.1	716,225,836	714,825,534
Balances with banks and security investments, external loans and other external assets	2.2	50,420,927,403	49,030,207,257
		51,137,153,239	**49,745,032,791**
Claims on euro area residents denominated in foreign currency	2.2	**2,472,936,063**	**1,862,714,832**
Other claims on euro area credit institutions denominated in euro	3	**98,603,066**	**52,711,983**
Securities of euro area residents denominated in euro	4		
Securities held for monetary policy purposes	4.1	**160,815,274,667**	**77,808,651,858**
Intra-Eurosystem claims	5		
Claims related to the allocation of euro banknotes within the Eurosystem	5.1	**90,097,085,330**	**86,674,472,505**
Other assets	6		
Tangible and intangible fixed assets	6.1	1,239,325,587	1,263,646,830
Other financial assets	6.2	20,618,929,223	20,423,917,583
Off-balance-sheet instruments revaluation differences	6.3	839,030,321	518,960,866
Accruals and prepaid expenses	6.4	2,045,522,937	1,320,068,350
Sundry	6.5	1,799,777,235	1,180,224,603
		26,542,585,303	**24,706,818,232**
Total assets		**348,984,399,128**	**256,645,378,525**

LIABILITIES	Note number	2016 €	2015 €
Banknotes in circulation	7	**90,097,085,330**	**86,674,472,505**
Other liabilities to euro area credit institutions denominated in euro	8	**1,851,610,500**	**0**
Liabilities to other euro area residents denominated in euro	9		
Other liabilities	9.1	**1,060,000,000**	**1,026,000,000**
Liabilities to non-euro area residents denominated in euro	10	**16,730,644,177**	**2,330,804,192**
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	151,201,250,612	83,083,520,309
		191,993,859,030	**123,876,128,727**
Other liabilities	12		
Off-balance-sheet instruments revaluation differences	12.1	660,781,618	392,788,148
Accruals and income collected in advance	12.2	69,045,958	95,543,989
Sundry	12.3	1,255,559,836	891,555,907
		1,985,387,412	**1,379,888,044**
Provisions	13	**7,706,359,686**	**7,703,394,185**
Revaluation accounts	14	**28,626,267,808**	**24,832,823,174**
Capital and reserves	15		
Capital	15.1	**7,740,076,935**	**7,740,076,935**
Profit for the year		**1,193,108,250**	**1,081,790,763**
Total liabilities		**348,984,399,128**	**256,645,378,525**

Profit and Loss Account for the year ending 31 December 2016

	Note number	2016 €	2015 €
Interest income on foreign reserve assets	22.1	370,441,770	283,205,941
Interest income arising from the allocation of euro banknotes within the Eurosystem	22.2	8,920,896	41,991,105
Other interest income	22.4	1,604,648,023	1,732,919,191
Interest income		*1,984,010,689*	*2,058,116,237*
Remuneration of NCBs' claims in respect of foreign reserves transferred	22.3	(3,611,845)	(17,576,514)
Other interest expense	22.4	(332,020,205)	(565,387,082)
Interest expense		*(335,632,050)*	*(582,963,596)*
Net interest income	22	**1,648,378,639**	**1,475,152,641**
Realised gains/losses arising from financial operations	23	224,541,742	214,433,730
Write-downs on financial assets and positions	24	(148,172,010)	(64,053,217)
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		**76,369,732**	**150,380,513**
Net income/expense from fees and commissions	25	**371,322,769**	**268,332,261**
Income from equity shares and participating interests	26	**869,976**	**908,109**
Other income	27	**50,000,263**	**51,023,378**
Total net income		**2,146,941,379**	**1,945,796,902**
Staff costs	28	(466,540,231)	(440,844,142)
Administrative expenses	29	(414,207,622)	(351,014,617)
Depreciation of tangible and intangible fixed assets		(64,769,605)	(64,017,361)
Banknote production services	30	(8,315,671)	(8,130,019)
Profit for the year		**1,193,108,250**	**1,081,790,763**

Frankfurt am Main, 7 February 2017

European Central Bank

Mario Draghi
President

Accounting policies[18]

Form and presentation of the financial statements

The financial statements of the ECB have been drawn up in accordance with the following accounting policies,[19] 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 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,

18 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.

19 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.

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 2016, was derived from the exchange rate of the euro against the US dollar on 30 December 2016.

The special drawing right (SDR) is defined in terms of a basket of currencies. To revalue the ECB's holdings of SDRs, the value of the SDR was calculated as the weighted sum of the exchange rates of five major currencies (the US dollar, euro, Japanese yen, pound sterling and Chinese renminbi) converted into euro as at 30 December 2016.

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 2016, mid-market prices on 30 December 2016 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.[20] 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 but 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 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

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

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 out and then assigned to the ECB on a daily basis, leaving each NCB with a single net bilateral position vis-à-vis the ECB only. This position in the books of the ECB represents the net claim or liability of each NCB against the rest of the 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,[21] 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. 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.

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.

21 As at 31 December 2016 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 ECB's pension plans, other post-employment benefits and other long-term 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 20.7% and 7.4% of basic salary respectively and 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.[22] These additional benefits are determined by the amount of voluntary contributions together with the investment returns arising from these 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.

Net defined benefit liability

The liability recognised in the Balance Sheet under "Other liabilities" in respect of the defined benefit plans 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 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 term of the pension obligation.

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

Net defined benefit cost

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

22 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.

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

(c) remeasurements in respect of other long-term benefits, 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.[23] 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.[24]

The ECB has been allocated a share of 8% of the total value of euro banknotes in circulation, which is disclosed in the Balance Sheet under the liability item “Banknotes in circulation”. The ECB’s share of the total euro banknote issue is backed by claims on the NCBs. These claims, which bear interest,[25] 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”.

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[23] Decision ECB/2010/29 of 13 December 2010 on the issue of euro banknotes (recast), OJ L 35, 9.2.2011, p. 26, as amended.

[24] “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.

[25] 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.

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.[26] 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 interim profit distribution by the amount of the costs incurred by the ECB in connection with the issue and handling of euro banknotes.

Reclassifications

Interest income (e.g. coupon interest) and interest expense (e.g. premium amortisation) arising from securities held for monetary policy purposes were previously presented on a gross basis under the headings "Other interest income" and "Other interest expense" respectively. With a view to harmonising at the Eurosystem level the reporting of interest income and expense arising from monetary policy operations, the ECB has decided that from 2016 these items will be presented on a net basis under either "Other interest income" or "Other interest expense", depending on whether the net amount is positive or negative. The comparable amounts for 2015 have been adjusted as follows:

	Published in 2015 €	Adjustment owing to reclassification €	Restated amount €
Other interest income	2,168,804,955	(435,885,764)	1,732,919,191
Other interest expense	(1,001,272,846)	435,885,764	(565,387,082)

The reclassification had no impact on the net profit reported for 2015.

Other issues

Taking account of the ECB's role as a central bank, the publication of a cash-flow statement would not provide the readers of the financial statements with any additional relevant information.

26 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.

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.

Notes on the Balance Sheet

1 Gold and gold receivables

As at 31 December 2016 the ECB held 16,229,522 ounces[27] of fine gold. No transactions in gold took place in 2016 and the ECB's holdings therefore remained unchanged compared with their level as at 31 December 2015. The increase in the euro equivalent value of these holdings was due to the rise in the price of gold in 2016 (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 2016. 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).

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 and Japanese yen.

Claims on non-euro area residents	2016 €	2015 €	Change €
Current accounts	6,844,526,120	4,398,616,340	2,445,909,780
Money market deposits	2,005,810,644	1,666,345,182	339,465,462
Reverse repurchase agreements	503,747,273	831,266,648	(327,519,375)
Security investments	41,066,843,366	42,133,979,087	(1,067,135,721)
Total	**50,420,927,403**	**49,030,207,257**	**1,390,720,146**

27 This corresponds to 504.8 tonnes.

Claims on euro area residents	2016 €	2015 €	Change €
Current accounts	1,211,369	953,098	258,271
Money market deposits	1,964,182,715	1,861,761,734	102,420,981
Reverse repurchase agreements	507,541,979	0	507,541,979
Security investments	0	0	0
Total	**2,472,936,063**	**1,862,714,832**	**610,221,231**

The increase in these items in 2016 was mainly due to the appreciation of both the US dollar and the Japanese yen against the euro.

The ECB's net foreign currency holdings of US dollars and Japanese yen,[28] as at 31 December 2016, were as follows:

	2016 Currency in millions	2015 Currency in millions
US dollars	46,759	46,382
Japanese yen	1,091,844	1,085,596

3 Other claims on euro area credit institutions denominated in euro

As at 31 December 2016 this item consisted of current accounts with euro area residents.

4 Securities of euro area residents denominated in euro

4.1 Securities held for monetary policy purposes

As at 31 December 2016 this item consisted of securities acquired by the ECB within the scope of the three covered bond purchase programmes, the Securities Markets Programme (SMP), the asset-backed securities purchase programme (ABSPP) and the public sector purchase programme (PSPP).

Purchases under the first covered bond purchase programme were completed on 30 June 2010, while the second covered bond purchase programme ended on 31 October 2012. The SMP was terminated on 6 September 2012.

28 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.

In 2016 the Eurosystem programmes constituting the asset purchase programme (APP),[29] i.e. the third covered bond purchase programme (CBPP3), the ABSPP and the PSPP, were supplemented by a fourth component, the corporate sector purchase programme (CSPP).[30] In 2016 the Governing Council took decisions that had a direct impact on the pace of monthly purchases and the duration of the APP.[31] These decisions were (i) to increase the combined monthly net APP purchases by the NCBs and the ECB from €60 billion to €80 billion on average from April 2016; and (ii) to continue the net APP purchases after March 2017 at a monthly pace of €60 billion until the end of December 2017 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.[32] 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[33] (which is not recorded on the Balance Sheet or in the Profit and Loss Account but is provided for comparison purposes only), are as follows:

	2016 €		2015 €		Change €	
	Amortised cost	Market value	Amortised cost	Market value	Amortised cost	Market value
First covered bond purchase programme	1,032,305,522	1,098,106,253	1,786,194,503	1,898,990,705	(753,888,981)	(800,884,452)
Second covered bond purchase programme	690,875,649	743,629,978	933,230,549	1,013,540,352	(242,354,900)	(269,910,374)
Third covered bond purchase programme	16,550,442,553	16,730,428,857	11,457,444,451	11,396,084,370	5,092,998,102	5,334,344,487
Securities Markets Programme	7,470,766,415	8,429,995,853	8,872,443,668	10,045,312,608	(1,401,677,253)	(1,615,316,755)
Asset-backed securities purchase programme	22,800,124,065	22,786,088,513	15,321,905,622	15,220,939,054	7,478,218,443	7,565,149,459
Public sector purchase programme	112,270,760,463	112,958,545,591	39,437,433,065	39,372,318,024	72,833,327,398	73,586,227,567
Total	**160,815,274,667**	**162,746,795,045**	**77,808,651,858**	**78,947,185,113**	**83,006,622,809**	**83,799,609,932**

The decrease in the amortised cost of the portfolios held under the first and second covered bond purchase programmes 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.

29 Further details on the APP can be found on the ECB's website.

30 Under this programme, the NCBs may purchase investment-grade euro-denominated bonds issued by non-bank corporations established in the euro area. The ECB does not purchase securities under this programme.

31 See the ECB's press releases of 10 March 2016 and of 8 December 2016.

32 In the pursuit of price stability, the ECB aims at maintaining inflation rates below, but close to, 2% over the medium term.

33 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.

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 for the securities held in the monetary policy portfolios in 2016.

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[34] (see note 22.2, "Interest income arising from the allocation of euro banknotes within the Eurosystem").

6 Other assets

6.1 Tangible and intangible fixed assets

These assets comprised the following items on 31 December 2016:

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

	2016 €	2015 €	Change €
Cost			
Land and buildings	1,011,662,911	1,027,242,937	(15,580,026)
Plant in building	221,888,762	219,897,386	1,991,376
Computer hardware and software	88,893,887	77,350,193	11,543,694
Equipment, furniture and motor vehicles	96,197,706	92,000,437	4,197,269
Assets under construction	3,024,459	244,590	2,779,869
Other fixed assets	9,713,742	9,453,181	260,561
Total cost	**1,431,381,467**	**1,426,188,724**	**5,192,743**
Accumulated depreciation			
Land and buildings	(72,284,513)	(79,468,891)	7,184,378
Plant in building	(31,590,282)	(15,827,521)	(15,762,761)
Computer hardware and software	(57,935,440)	(45,530,493)	(12,404,947)
Equipment, furniture and motor vehicles	(29,107,438)	(20,831,615)	(8,275,823)
Other fixed assets	(1,138,207)	(883,374)	(254,833)
Total accumulated depreciation	**(192,055,880)**	**(162,541,894)**	**(29,513,986)**
Net book value	**1,239,325,587**	**1,263,646,830**	**(24,321,243)**

The net decrease in the cost category "Land and buildings" and the corresponding accumulated depreciation was mainly due to the derecognition of capitalised refurbishment expenditure relating to items that were no longer in use.

6.2 Other financial assets

This item consists mainly of the investment of the ECB's own funds[35] 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:

	2016 €	2015 €	Change €
Current accounts in euro	30,000	30,000	-
Securities denominated in euro	19,113,074,101	19,192,975,459	(79,901,358)
Reverse repurchase agreements in euro	1,463,994,460	1,188,997,789	274,996,671
Other financial assets	41,830,662	41,914,335	(83,673)
Total	**20,618,929,223**	**20,423,917,583**	**195,011,640**

The net increase in this item in 2016 was due mainly to the reinvestment of interest income generated on the own funds portfolio.

35 Repurchase agreements conducted in the context of the management of the own funds portfolio are reported under "Sundry" on the liabilities side (see note 12.3, "Sundry").

6.3 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 2016 (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 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 2016 this item included accrued coupon interest on securities, including outstanding interest paid at acquisition, amounting to €1,924.5 million (2015: €1,186.6 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) accrued interest income on other financial assets; and (c) miscellaneous prepayments.

6.5 Sundry

This item included 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 included balances related to swap and forward transactions in foreign currency outstanding on 31 December 2016 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 the 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

On 8 December 2016 the Governing Council decided that Eurosystem central banks will have the possibility to also accept cash as collateral in their PSPP securities lending facilities without having to reinvest it. For the ECB, these operations are conducted via a specialised institution.

As at 31 December 2016 such PSPP securities lending transactions with a value of €1.9 billion conducted with euro area credit institutions remained outstanding. Cash received as collateral was transferred to TARGET2 accounts (see note 11.2, "Other liabilities within the Eurosystem (net)"). 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).[36]

9 Liabilities to other euro area residents denominated in euro

9.1 Other liabilities

This item comprises deposits by members of the Euro Banking Association (EBA) which are used as a guarantee fund for the EURO1[37] settlement in TARGET2 system.

10 Liabilities to non-euro area residents denominated in euro

As at 31 December 2016 this item comprised an amount of €9.5 billion (2015: €1.5 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 increase in these balances in 2016 was due to payments from euro area residents to non-euro area residents (see note 11.2, "Other liabilities within the Eurosystem (net)").

This item also included an amount of €4.1 billion (2015: €0.8 billion) arising from the standing reciprocal currency arrangement with the Federal Reserve. 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

[36] 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").

[37] EURO1 is a payment system operated by the EBA.

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”).

The remainder of this item consisted of an amount of €3.1 billion (2015: €0) arising from outstanding PSPP securities lending transactions conducted with non-euro area residents whereby 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 the euro area NCBs that arose from the transfer of foreign reserve assets to the ECB when they joined the Eurosystem. No changes occurred in 2016.

	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 2016 this item consisted mainly of the TARGET2 balances of the euro area NCBs vis-à-vis the ECB (see "Intra-ESCB balances/intra-Eurosystem balances" in the notes on accounting policies). The net increase in this position resulted mainly from 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 purchases was partially offset by (a) the settlement in TARGET2 of payments from euro area residents to non-euro area residents (see note 10, "Liabilities to non-euro area residents denominated in euro"); (b) cash received as collateral against the lending of PSPP securities (see note 8, "Other liabilities to euro area credit institutions denominated in euro", and note 10, "Liabilities to non-euro area residents denominated in euro"); (c) the increase in the amounts related to the back-to-back swap transactions conducted with NCBs in connection with US dollar liquidity-providing operations; and (d) redemptions of securities purchased under the SMP and the first two covered bond purchase programmes, which were also settled via TARGET2 accounts.

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 included 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).

	2016 €	2015 €
Due to euro area NCBs in respect of TARGET2	1,058,484,156,256	812,734,808,529
Due from euro area NCBs in respect of TARGET2	(908,249,140,203)	(730,463,422,714)
Due to euro area NCBs in respect of the ECB's interim profit distribution	966,234,559	812,134,494
Other liabilities within the Eurosystem (net)	**151,201,250,612**	**83,083,520,309**

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 2016 (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 2016 this item included income collected in advance in connection with the Single Supervisory Mechanism (SSM) (see note 25, "Net income/expenses from fees and commissions"), administrative accruals and accruals on financial instruments.

This item also included accrued interest payable to the NCBs for the whole of 2016 in respect of their claims relating to foreign reserves transferred to the ECB (see note 11.1, "Liabilities equivalent to the transfer of foreign reserves"). This amount was settled in January 2017.

	2016 €	2015 €	Change €
Administrative accruals	20,723,173	20,455,723	267,450
Financial instruments	3,621,142	2,191,753	1,429,389
SSM income collected in advance	41,089,798	18,926,078	22,163,720
Foreign reserves transferred to the ECB	3,611,845	17,576,514	(13,964,669)
TARGET2	-	36,393,921	(36,393,921)
Total	**69,045,958**	**95,543,989**	**(26,498,031)**

12.3 Sundry

In 2016 this item included balances related to swap and forward transactions in foreign currency that were outstanding on 31 December 2016 (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 included 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 ECB's pension plans, other post-employment benefits and other long-term benefits[38]

Balance Sheet

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

	2016 Staff € millions	2016 Boards € millions	2016 Total € millions	2015 Staff € millions	2015 Boards € millions	2015 Total € millions
Present value of obligation	1,361.3	27.7	1,388.9	1,116.7	24.1	1,140.8
Fair value of plan assets	(878.0)	-	(878.0)	(755.3)	-	(755.3)
Net defined benefit liability recognised in the Balance Sheet	**483.3**	**27.7**	**510.9**	**361.4**	**24.1**	**385.5**

In 2016 the present value of the obligation vis-à-vis staff of €1,361.3 million (2015: €1,116.7 million) included unfunded benefits amounting to €187.0 million (2015: €155.9 million) relating to post-employment benefits other than pensions and

[38] 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.

to other long-term benefits. Unfunded arrangements are also in place for the post-employment and other long-term benefits of members of the Executive Board and members of the Supervisory Board.

Profit and Loss Account

The amounts recognised in the Profit and Loss Account in 2016 were as follows:

	2016 Staff € millions	2016 Boards € millions	2016 Total € millions	2015 Staff € millions	2015 Boards € millions	2015 Total € millions
Current service cost	104.4	1.6	106.0	120.0	1.9	121.9
Net interest on the net defined benefit liability	9.7	0.6	10.3	9.5	0.5	10.0
of which:						
Cost on the obligation	*29.1*	*0.6*	*29.8*	*22.9*	*0.5*	*23.4*
Income on plan assets	*(19.5)*	*-*	*(19.5)*	*(13.4)*	*-*	*(13.4)*
Remeasurement (gains)/losses on other long-term benefits	0.6	0.1	0.7	2.6	(0.1)	2.5
Total included in “Staff costs”	**114.6**	**2.4**	**117.0**	**132.1**	**2.3**	**134.4**

The current service cost decreased in 2016 to €106.0 million (2015: €121.9 million), owing mainly to the increase in the discount rate from 2% in 2014 to 2.5% in 2015.[39]

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

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

	2016 Staff € millions	2016 Boards € millions	2016 Total € millions	2015 Staff € millions	2015 Boards € millions	2015 Total € millions
Opening defined benefit obligation	1,116.7	24.1	1,140.8	1,087.1	24.5	1,111.6
Current service cost	104.4	1.6	106.0	120.0	1.9	121.9
Interest cost on the obligation	29.1	0.6	29.8	22.9	0.5	23.4
Contributions paid by plan participants	19.5	0.2	19.8	21.7	0.2	21.9
Benefits paid	(8.6)	(0.8)	(9.5)	(7.5)	(0.8)	(8.3)
Remeasurement (gains)/losses	100.2	1.9	102.1	(127.5)	(2.2)	(129.7)
Closing defined benefit obligation	**1,361.3**	**27.7**	**1,388.9**	**1,116.7**	**24.1**	**1,140.8**

The total remeasurement losses of €102.1 million for 2016 on the defined benefit obligation arose primarily owing to the reduction in the discount rate from 2.5% in 2015 to 2% in 2016.

39 The current service cost is estimated using the discount rate that applied in the previous year.

Changes in 2016 in the fair value of plan assets in the defined benefit pillar relating to staff were as follows:

	2016 € millions	2015 € millions
Opening fair value of plan assets	755.3	651.9
Interest income on plan assets	19.5	13.4
Remeasurement gains	44.7	26.8
Contributions paid by employer	45.0	46.9
Contributions paid by plan participants	19.5	21.7
Benefits paid	(6.0)	(5.4)
Closing fair value of plan assets	**878.0**	**755.3**

Remeasurement gains on plan assets in both 2016 and 2015 reflected the fact that actual returns on the fund units were higher than the estimated interest income on plan assets.

In 2016, as a follow-up to a funding valuation of the staff pension plan carried out by the ECB's actuaries as at 31 December 2015, the Governing Council decided, inter alia, to (a) discontinue the ECB's annual supplementary contributions of €6.8 million, and (b) to increase from September 2016 the contributions made by the ECB to the staff pension plan from 19.5% to 20.7% of basic salary.[40] These decisions resulted in a net reduction in the total contributions paid by the ECB in 2016 despite the increase in the number of plan members (see note 28, "Staff costs").

Changes in 2016 in the remeasurement results (see note 14, "Revaluation accounts") were as follows:

	2016 € millions	2015 € millions
Opening remeasurement gains/(losses)	(148.4)	(305.6)
Contributions by NCBs joining the Eurosystem [41]	0.0	(1.8)
Gains on plan assets	44.7	26.8
Gains/(losses) on obligation	(102.1)	129.7
Losses recognised in the Profit and Loss Account	0.7	2.5
Closing remeasurement losses included under "Revaluation accounts"	**(205.1)**	**(148.4)**

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 benefits scheme liability are as follows:

40 In addition, the Governing Council decided to increase the contribution rate paid by ECB staff from 6.7% to 7.4% of basic salary.

41 Upon the adoption of the single currency by Lithuania, Lietuvos bankas contributed to the balances of all the revaluation accounts of the ECB with effect from 1 January 2015. The outstanding remeasurement losses that were included in the revaluation accounts as at 31 December 2014 resulted in a reduction in the contributions by Lietuvos bankas.

	2016 %	2015 %
Discount rate	2.00	2.50
Expected return on plan assets [42]	3.00	3.50
General future salary increases [43]	2.00	2.00
Future pension increases [44]	1.40	1.40

Furthermore, voluntary contributions made by staff in a defined contribution pillar in 2016 amounted to €133.2 million (2015: €123.3 million). These contributions are invested in the plan assets but also 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, in particular valuation losses exceeding the respective revaluation accounts. The size of and continuing requirement for this provision is reviewed annually, based on the ECB's assessment of its exposure to these risks and taking a range of factors into account. Its size, together with any amount held in the general reserve fund, may not exceed the value of the ECB's capital paid up by the euro area NCBs.

As at 31 December 2016 the provision for foreign exchange rate, interest rate, credit and gold risks amounted to €7,619,884,851, unchanged from 2015. 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-

[42] 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.

[43] 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.

[44] 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.

employment benefits (see “The ECB’s pension plans, other post-employment benefits and other long-term benefits” in the notes on accounting policies and note 12.3, “Sundry”).

	2016 €	2015 €	Change €
Gold	13,926,380,231	11,900,595,095	2,025,785,136
Foreign currency	14,149,471,665	12,272,562,352	1,876,909,313
Securities and other instruments	755,494,021	808,078,836	(52,584,815)
Net defined benefit liability in respect of post-employment benefits	(205,078,109)	(148,413,109)	(56,665,000)
Total	**28,626,267,808**	**24,832,823,174**	**3,793,444,634**

The increase in the size of the revaluation accounts is due to the depreciation of the euro against gold, the US dollar and Japanese yen in 2016.

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

Exchange rates	2016	2015
US dollars per euro	1.0541	1.0887
Japanese yen per euro	123.40	131.07
Euro per SDR	1.2746	1.2728
Euro per fine ounce of gold	1,098.046	973.225

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.[45]

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

	Capital key since 1 January 2015[46] %	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. This contribution amounted to a total of €120,192,083 at the end of 2016, unchanged from 2015. The non-euro area NCBs are not entitled to receive any share of the distributable profits of the ECB, including income arising from the allocation of euro banknotes within the Eurosystem, nor are they liable to fund any loss of the ECB.

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

46 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 weigh of the euro area NCBs in the ECB's overall capital increased, whereas the total capital key weight of the non-euro area NCBs decreased. No changes took place in 2016.

	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, whereby 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 covered bond purchase programmes, 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.[47]

If no cash collateral remains uninvested at the year-end, the related securities lending operations are recorded in off-balance sheet accounts.[48] Such securities lending operations, with a value of €10.9 billion (2015: €4.5 billion), were outstanding as at 31 December 2016. Of this amount, €3.9 billion (2015: €0.3 billion) related to the lending of securities held for monetary policy purposes.

17 Interest rate futures

As at 31 December 2016 the following foreign currency transactions, presented at year-end market rates, were outstanding:

Foreign currency interest rate futures	2016 Contract value €	2015 Contract value €	Change €
Purchases	558,770,515	694,406,172	(135,635,657)
Sales	2,258,798,975	690,554,100	1,568,244,875

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 €378.3 million (2015: €274.5 million), presented at year-end market rates, were outstanding as at 31 December 2016. These transactions were conducted in the context of the management of the ECB's foreign reserves.

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

48 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).

19 Foreign exchange swap and forward transactions

Management of foreign reserves

Foreign exchange swap and forward transactions were conducted in 2016 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 2016 are presented at year-end market rates as follows:

Foreign exchange swap and forward transactions	2016 €	2015 €	Change €
Claims	3,123,544,615	2,467,131,004	656,413,611
Liabilities	2,855,828,167	2,484,517,472	371,310,695

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 2016 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 2016 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 alleged that they had suffered financial losses as a result of acts that they deemed 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 Treaty establishing the European Stability Mechanism, 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:

	2016 €	2015 €	Change €
Interest income on current accounts	1,499,288	552,459	946,829
Interest income on money market deposits	18,095,835	6,306,443	11,789,392
Interest income/(expense) on repurchase agreements	(34,017)	38,311	(72,328)
Interest income on reverse repurchase agreements	12,745,338	2,920,201	9,825,137
Interest income on securities	304,958,993	261,121,900	43,837,093
Interest income/(expense) on interest rate swaps	19,080	(861,355)	880,435
Interest income on forward and swap transactions in foreign currencies	33,157,253	13,127,982	20,029,271
Interest income on foreign reserve assets (net)	**370,441,770**	**283,205,941**	**87,235,829**

The overall increase in net interest income in 2016 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"). Despite a 4.7% increase in the average value of banknotes in circulation, there was a decrease in income in 2016 owing to the fact that the average rate on the main refinancing operations was lower than in 2015 (at 0.01% in 2016, compared with 0.05% in 2015).

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 decrease in this remuneration in 2016 reflected the fact that the average rate on the main refinancing operations was lower than in 2015.

22.4 Other interest income; and other interest expense[49]

In 2016 these items comprised mainly net interest income of €1.0 billion (2015: €0.9 billion) on the securities purchased by the ECB for monetary policy purposes. Of this amount, €0.5 billion (2015: €0.6 billion) related to net interest income on securities purchased under the SMP and €0.4 billion (2015: €0.2 billion) related to net interest income on securities purchased under the APP.

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 2016 were as follows:

	2016 €	2015 €	Change €
Net realised price gains	159,456,244	175,959,137	(16,502,893)
Net realised exchange rate and gold price gains	65,085,498	38,474,593	26,610,905
Net realised gains arising from financial operations	**224,541,742**	**214,433,730**	**10,108,012**

Net realised price gains included realised gains and losses on securities, interest rate futures and interest rate swaps. The decrease in net realised price gains in 2016 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 outflows in SDR holdings in the context of the two-way SDR buying and selling arrangement with the IMF (see note 2.1, "Receivables from the IMF").

24 Write-downs on financial assets and positions

Write-downs on financial assets and positions in 2016 were as follows:

49 With effect from 2016 interest income and interest expense arising from securities held for monetary policy purposes is reported on a net basis under either "Other interest income" or "Other interest expense", depending on whether the net amount is positive or negative (see "Reclassifications" in the notes on accounting policies).

	2016 €	2015 €	Change €
Unrealised price losses on securities	(148,159,250)	(63,827,424)	(84,331,826)
Unrealised price losses on interest rate swaps	-	(223,892)	223,892
Unrealised exchange rate losses	(12,760)	(1,901)	(10,859)
Total write-downs	**(148,172,010)**	**(64,053,217)**	**(84,118,793)**

The higher write-downs compared with 2015 were mainly due to the higher market yields of the securities held in the US dollar portfolio alongside the overall decrease in their market value.

25 Net income/expense from fees and commissions

	2016 €	2015 €	Change €
Income from fees and commissions	382,191,051	277,324,169	104,866,882
Expenses relating to fees and commissions	(10,868,282)	(8,991,908)	(1,876,374)
Net income from fees and commissions	**371,322,769**	**268,332,261**	**102,990,508**

In 2016 income under this heading consisted mainly of supervisory fees. Expenses consisted mainly of custody fees, as well as fees payable to the external asset managers conducting purchases of eligible asset-backed securities on explicit instructions from, and on behalf of, the Eurosystem.

Income and expenses related to supervisory tasks

On November 2014 the ECB assumed its supervisory tasks in accordance with Article 33 of Council Regulation 1024/2013/EU of 15 October 2013. In order to recover its expenditure incurred for performing these tasks the ECB levies annual fees on supervised entities. The ECB announced in April 2016 that the annual supervisory fees in 2016 would amount to €404.5 million.[50] This amount was based on an estimated annual expenditure for 2016 amounting to €423.2 million, after adjustments for (i) the surplus supervisory fees of €18.9 million charged in 2015; (ii) the amounts refunded in relation to changes in the number or status of supervised entities[51] (€0.3 million); and (iii) interest of €0.1 million charged for late payments in 2015.

Based on the actual expenditure of the ECB on its banking supervisory tasks, the supervisory fee income for 2016 stood at €382.2 million.

[50] This amount was invoiced in October 2016 with a due date of 18 November 2016.

[51] Based on Article 7 of the ECB Regulation on supervisory fees (ECB/2014/41), 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.

	2016 €	2015 €	Change €
Supervisory fees	382,151,355	277,086,997	105,064,358
of which:			
Fees allocated to significant entities or significant groups	*338,418,328*	*245,620,964*	*92,797,364*
Fees allocated to less significant entities or less significant groups	*43,733,027*	*31,466,033*	*12,266,994*
Total income from banking supervision tasks	**382,151,355**	**277,086,997**	**105,064,358**

The surplus of €41.1 million arising from the difference between the estimated expenditure (€423.2 million) and the actual expenditure (€382.2 million) for 2016 is shown under the heading "Accruals and income collected in advance" (see note 12.2, "Accruals and income collected in advanced"). It will reduce the supervisory fees to be levied in 2017.

Furthermore, the ECB is entitled to impose fines or periodic penalty payments on undertakings for failure to comply with obligations under its regulations and decisions. No such fines or penalties were imposed in 2016.

The SSM-related expenditure results 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. It also includes expenditure 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.

For 2016 this expenditure is broken down under the following headings:

	2016 €	2015 €	Change €
Salaries and benefits	180,655,666	141,262,893	39,392,773
Rent and building maintenance	58,103,644	25,513,220	32,590,424
Other operating expenditure	143,392,045	110,310,884	33,081,161
Total expenditure related to banking supervision tasks	**382,151,355**	**277,086,997**	**105,064,358**

The increase in the total number of staff working in ECB Banking Supervision, the relocation to new premises and the provision of statistical and IT infrastructure for the performance of supervisory tasks contributed to the rise in total SSM expenditure for 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 2016 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 2016 has led to an overall increase in staff costs. This increase was partially offset by a decrease in the net expense related to post-employment benefits and other long-term benefits.

Salaries, allowances, staff insurance and other miscellaneous costs of €349.5 million (2015: €306.4 million) are included under this heading. Also included in this item is an amount of €117.0 million (2015: €134.4 million) recognised in connection with the ECB's pension plans, other post-employment benefits and other long-term benefits (see note 12.3, "Sundry").

Salaries and allowances, including the emoluments of holders of senior management positions, are modelled in essence on, and are comparable with, the remuneration scheme of the European Union institutions.

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 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 are 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 2016 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:[52]

[52] Amounts are presented gross, i.e. before any tax deductions for the benefit of the European Union.

	2016 €	2015 €
Mario Draghi (President)	389,760	385,860
Vítor Constâncio (Vice-President)	334,080	330,744
Peter Praet (Board Member)	277,896	275,604
Benoît Cœuré (Board Member)	277,896	275,604
Yves Mersch (Board Member)	277,896	275,604
Sabine Lautenschläger (Board Member)	277,896	275,604
Total Executive Board	**1,835,424**	**1,819,020**
Total Supervisory Board (members employed by the ECB) [53]	**631,254**	**635,385**
of which:		
Danièle Nouy (Chair of the Supervisory Board)	277,896	275,604
Total	**2,466,678**	**2,454,405**

Furthermore, the additional remuneration of the part-time members of the Supervisory Board amounted to €343,341 (2015: €352,256).

The total allowances paid to members of both boards and the ECB's contributions to the medical and accident insurance schemes on their behalf amounted to €807,475 (2015: €625,021). In December 2015 the Governing Council decided that, for staff members and Board members who bear the full cost of private medical insurance coverage, the ECB would pay an amount equivalent to the contribution it would make if the individuals were members of the ECB's medical scheme. Furthermore, the rule includes a retroactive clause for medical insurance payments from 1 January 2013. Due to this clause, allowance payments in 2017 are expected to be lower than in 2016.

Transitional payments may be made to former members of the Executive Board and the Supervisory Board for a limited period after the end of their terms of office. No such payments were made in 2016. Pension payments, including related allowances, to former board members or their dependents and contributions to the medical and accident insurance schemes amounted to €834,668 (2015: €783,113).

At the end of 2016 the actual full-time equivalent number of staff holding contracts with the ECB was 3,171,[54] including 320 with managerial positions. The change in the number of staff during 2016 was as follows:

53 This total excludes the salary of Sabine Lautenschläger, which is reported with those of the other members of the Executive Board.

54 Staff on unpaid leave are excluded. This number includes staff with permanent, fixed or short-term contracts and the participants in the ECB's Graduate Programme. Staff on maternity or long-term sick leave are also included.

	2016	2015
Total staff as at 1 January (excluding new starters on 1 January)	2,871	2,577
Newcomers/change of contractual status	725	648
Resignations/end of contract	(380)	(299)
Net increase/(decrease) due to changes in part-time working patterns	(45)	(55)
Total staff as at 31 December	**3,171**	**2,871**
Average number of staff employed	**3,007**	**2,722**

29 Administrative expenses

These cover all other current expenses relating to the renting and maintenance of premises, goods and equipment of a non-capital nature, professional fees and other services and supplies, together with staff-related expenses including recruitment, relocation, installation, training and resettlement 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.

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President and Governing Council
of the European Central Bank
Frankfurt am Main

8 February 2017

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 2016, 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 2016 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).

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), 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).
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	Victor Veger
Wirtschaftsprüfer	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 2016.

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 2016 was €1,193.1 million. Following a decision by the Governing Council, an interim profit distribution, amounting to €966.2 million, was paid out to the euro area NCBs on 31 January 2017. Furthermore, the Governing Council decided to distribute the remaining profit of €226.9 million to the euro area NCBs.

	2016 €	2015 €
Profit for the year	1,193,108,250	1,081,790,763
Interim profit distribution	(966,234,559)	(812,134,494)
Profit after the interim profit distribution	226,873,691	269,656,269
Distribution of the remaining profit	(226,873,691)	(269,656,269)
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 fund 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.

Consolidated balance sheet of the Eurosystem as at 31 December 2016[1]

(EUR millions) [2]

	ASSETS	31 December 2016	31 December 2015
1	**Gold and gold receivables**	**382,061**	**338,713**
2	**Claims on non-euro area residents denominated in foreign currency**	**327,854**	**307,243**
	2.1 Receivables from the IMF	78,752	80,384
	2.2 Balances with banks and security investments, external loans and other external assets	249,102	226,860
3	**Claims on euro area residents denominated in foreign currency**	**30,719**	**31,110**
4	**Claims on non-euro area residents denominated in euro**	**19,082**	**20,242**
	4.1 Balances with banks, security investments and loans	19,082	20,242
	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**	**595,873**	**558,989**
	5.1 Main refinancing operations	39,131	88,978
	5.2 Longer-term refinancing operations	556,570	469,543
	5.3 Fine-tuning reverse operations	0	0
	5.4 Structural reverse operations	0	0
	5.5 Marginal lending facility	172	468
	5.6 Credits related to margin calls	0	0
6	**Other claims on euro area credit institutions denominated in euro**	**69,104**	**107,864**
7	**Securities of euro area residents denominated in euro**	**1,974,899**	**1,161,004**
	7.1 Securities held for monetary policy purposes	1,654,026	803,135
	7.2 Other securities	320,873	357,869
8	**General government debt denominated in euro**	**26,460**	**25,145**
9	**Other assets**	**236,847**	**230,236**
Total assets		**3,662,901**	**2,780,546**

1 Based on provisional unaudited data. The annual accounts of all the NCBs will be finalised by the end of May 2017 and the final consolidated annual balance sheet of the Eurosystem will be published thereafter.

2 Totals/subtotals may not add up due to rounding.

	LIABILITIES	31 December 2016	31 December 2015
1	**Banknotes in circulation**	**1,126,216**	**1,083,539**
2	**Liabilities to euro area credit institutions related to monetary policy operations denominated in euro**	**1,313,264**	**768,419**
	2.1 Current accounts (covering the minimum reserve system)	888,988	555,864
	2.2 Deposit facility	424,208	212,415
	2.3 Fixed-term deposits	0	0
	2.4 Fine-tuning reverse operations	0	0
	2.5 Deposits related to margin calls	69	140
3	**Other liabilities to euro area credit institutions denominated in euro**	**9,427**	**5,200**
4	**Debt certificates issued**	**0**	**0**
5	**Liabilities to other euro area residents denominated in euro**	**220,760**	**141,805**
	5.1 General government	114,880	59,295
	5.2 Other liabilities	105,880	82,510
6	**Liabilities to non-euro area residents denominated in euro**	**205,678**	**54,529**
7	**Liabilities to euro area residents denominated in foreign currency**	**3,644**	**2,803**
8	**Liabilities to non-euro area residents denominated in foreign currency**	**9,301**	**3,677**
	8.1 Deposits, balances and other liabilities	9,301	3,677
	8.2 Liabilities arising from the credit facility under ERM II	0	0
9	**Counterpart of special drawing rights allocated by the IMF**	**59,263**	**59,179**
10	**Other liabilities**	**221,402**	**217,492**
11	**Revaluation accounts**	**394,418**	**345,703**
12	**Capital and reserves**	**99,527**	**98,199**
Total liabilities		**3,662,901**	**2,780,546**

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 2017.

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								
2016 26 Oct.	36,027	77	36,027	0.00	-	-	-	6
1 Nov.	32,728	59	32,728	0.00	-	-	-	8
9 Nov.	31,449	69	31,449	0.00	-	-	-	7
16 Nov.	32,639	72	32,639	0.00	-	-	-	7
23 Nov.	33,719	79	33,719	0.00	-	-	-	7
30 Nov.	35,952	86	35,952	0.00	-	-	-	7
7 Dec.	35,762	77	35,762	0.00	-	-	-	7
14 Dec.	36,822	76	36,822	0.00	-	-	-	7
21 Dec.	32,877	53	32,877	0.00	-	-	-	7
28 Dec.	39,131	74	39,131	0.00	-	-	-	7
Longer-term refinancing operations [5]								
2016 29 June [6]	399,289	514	399,289	0.00	-	-	-	1,456
30 June	7,726	55	7,726	0.00	-	-	-	91
28 July	7,010	70	7,010	0.00	-	-	-	91
1 Sep.	5,015	58	5,015	0.00	-	-	-	91
28 Sep. [6]	45,270	249	45,270	0.00	-	-	-	1,463
29 Sep.	4,570	40	4,570	0.00	-	-	-	84
27 Oct.	5,427	55	5,427	0.00	-	-	-	91
1 Dec.	3,270	46	3,270	0.00	-	-	-	84
21 Dec. [6]	62,161	200	62,161	0.00	-	-	-	1,456
22 Dec. [7]	2,671	36	2,671	.	-	-	-	98

Source: ECB.
1) Only the 10 last operations until the end of 2016 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 2016 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.

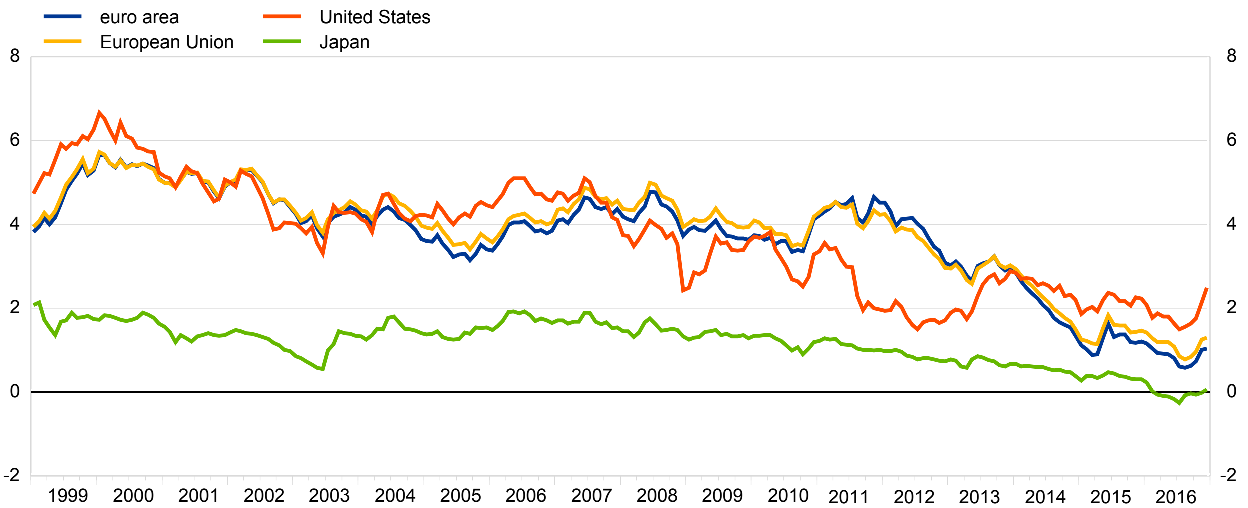
1 Financial and monetary developments

1.3 Long-term government bond yields
(percentages per annum; period averages)

	1999-2016 [1)]	1999-2008 [1)]	2009-2016	2013	2014	2015	2016
Belgium	3.6	4.5	2.5	2.4	1.7	0.8	0.5
Germany	3.1	4.3	1.7	1.6	1.2	0.5	0.1
Estonia [2)]	.	.	.	.	.	.	.
Ireland	4.4	4.4	4.4	3.8	2.4	1.2	0.7
Greece	7.5	4.8	11.0	10.1	6.9	9.7	8.4
Spain	4.1	4.4	3.7	4.6	2.7	1.7	1.4
France	3.4	4.4	2.2	2.2	1.7	0.8	0.5
Italy	4.2	4.6	3.7	4.3	2.9	1.7	1.5
Cyprus	5.3	5.3	5.3	6.5	6.0	4.5	3.8
Latvia	5.2	5.3	5.1	3.3	2.5	1.0	0.5
Lithuania	5.0	5.2	4.8	3.8	2.8	1.4	0.9
Luxembourg	3.1	4.1	2.0	1.9	1.3	0.4	0.3
Malta	4.1	5.0	3.2	3.4	2.6	1.5	0.9
Netherlands	3.3	4.4	2.0	2.0	1.5	0.7	0.3
Austria	3.4	4.4	2.2	2.0	1.5	0.7	0.4
Portugal	5.1	4.5	5.8	6.3	3.8	2.4	3.2
Slovenia	4.5	5.1	3.9	5.8	3.3	1.7	1.1
Slovakia	4.2	5.3	3.0	3.2	2.1	0.9	0.5
Finland	3.3	4.4	2.0	1.9	1.4	0.7	0.4
Euro area	3.7	4.4	2.9	3.0	2.0	1.2	0.9
Bulgaria	4.6	5.0	4.3	3.5	3.3	2.5	2.3
Czech Republic	3.5	4.6	2.5	2.1	1.6	0.6	0.4
Denmark	3.3	4.5	1.8	1.7	1.3	0.7	0.3
Croatia	5.3	5.1	5.3	4.7	4.1	3.6	3.5
Hungary	6.7	7.3	6.2	5.9	4.8	3.4	3.1
Poland	5.6	6.6	4.5	4.0	3.5	2.7	3.0
Romania	6.4	7.3	6.0	5.4	4.5	3.5	3.3
Sweden	3.4	4.5	1.9	2.1	1.7	0.7	0.5
United Kingdom	3.7	4.8	2.3	2.0	2.1	1.8	1.2
European Union	3.8	4.6	2.9	3.0	2.2	1.4	1.1
United States	3.7	4.7	2.5	2.3	2.5	2.1	1.8
Japan	1.2	1.5	0.8	0.7	0.6	0.4	0.0

Source: ECB calculations based on daily data from national central banks. Thomson Reuters data for the United States and Japan.
1) 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.
2) 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)]
(percentages per annum; monthly averages)



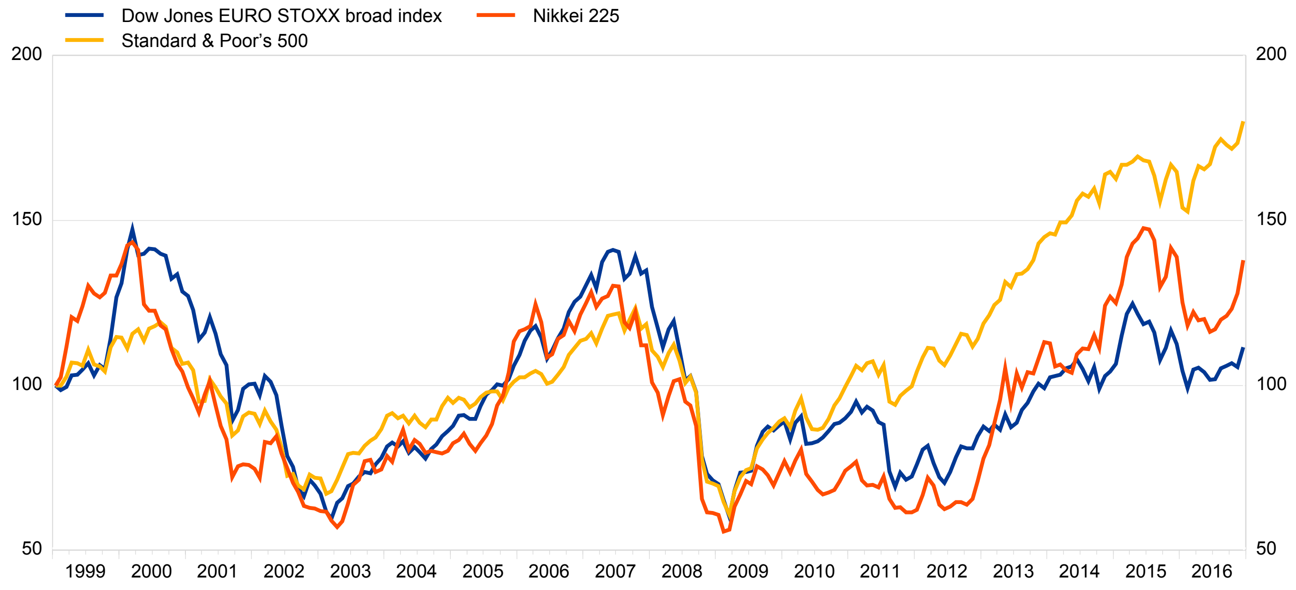
Source: ECB calculations based on daily data from national central banks. Thomson Reuters data for the United States and Japan.
1) Data for Cyprus, Latvia, Lithuania, Malta, Slovenia, Slovakia, Czech Republic, Hungary and Poland available since January 2001. Data for Bulgaria available since January 2003; for Romania since April 2005; and for Croatia since December 2005.

1.4 Selected stock market indices
(percentage changes)

	1999-2016 1)	1999-2008 1)	2009-2016	2013	2014	2015	2016
Belgium - BEL 20 Index	8.0	-42.9	43.6	18.1	12.4	12.6	-2.5
Germany - DAX 30 Index	65.0	-30.9	92.7	25.5	2.7	9.6	6.9
Estonia - OMXT Index	756.9	119.0	165.8	11.4	-7.7	19.1	19.6
Ireland - ISEQ Index	29.9	-53.3	119.1	33.6	15.1	30.0	-4.0
Greece - ASE Index	-88.7	-68.7	-70.7	28.1	-28.9	-23.6	1.9
Spain - IBEX 35 Index	-19.7	-21.0	-21.7	21.4	3.7	-7.2	-2.0
France - CAC 40 Index	-18.4	-46.0	23.5	18.0	-0.5	8.5	4.9
Italy - FTSEMIB Index	-54.9	-54.3	-17.3	16.6	0.2	12.7	-10.2
Cyprus - CSE Index	-93.4	9.4	-95.8	-10.1	-17.0	-20.9	-2.0
Latvia - OMXR Index	371.0	74.1	163.1	16.2	-11.3	45.7	23.5
Lithuania - OMXV Index	458.5	79.3	113.4	18.7	7.3	7.4	14.9
Luxembourg - LuxX Index	19.5	-29.8	21.7	16.1	4.9	-8.5	20.0
Malta - MSE Index	34.5	-6.8	33.8	14.8	-9.6	33.0	4.5
Netherlands - AEX Index	-28.0	-63.4	44.1	17.2	5.6	4.1	9.4
Austria - ATX Index	118.6	46.2	4.9	6.1	-15.2	11.0	9.2
Portugal - PSI 20 Index	-60.9	-47.0	-44.7	16.0	-26.8	10.7	-11.9
Slovenia - SBITOP Index	-51.3	-42.0	-27.0	3.2	19.6	-11.2	3.1
Slovakia - SAX Index	313.4	366.0	19.3	2.9	12.4	31.5	9.0
Finland - OMXH Index	-38.9	-62.9	37.9	26.5	5.7	10.8	3.6
Euro area - DJ EURO STOXX Broad Index	-15.9	-46.5	27.5	20.5	1.7	8.0	1.5
Bulgaria - SOFIX Index	449.5	236.0	37.3	42.3	6.2	-11.7	27.2
Czech Republic - PX 50 Index	88.2	75.3	-17.5	-4.8	-4.3	1.0	-3.6
Denmark - OMXC 20 Index	245.7	-3.1	162.5	24.1	20.9	36.2	-12.8
Croatia - CROBEX Index	70.1	46.9	-0.5	3.1	-2.7	-3.2	18.1
Hungary - BUX Index	262.9	38.8	50.8	2.2	-10.4	43.8	33.8
Poland - WIG Index	186.2	50.6	29.4	8.1	0.3	-9.6	11.4
Romania - BET Index	1,479.6	546.8	51.0	26.1	9.1	-1.1	1.2
Sweden - OMXS 30 Index	26.5	-44.8	59.4	20.7	9.9	-1.2	4.9
United Kingdom - FTSE 100 Index	3.1	-36.0	32.0	14.4	-2.7	-4.9	14.4
United States - S&P 500 Index	52.4	-38.5	100.8	29.6	11.4	-0.7	9.5
Japan - Nikkei 225 Index	1.0	-53.2	81.2	56.7	7.1	9.1	0.4

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.

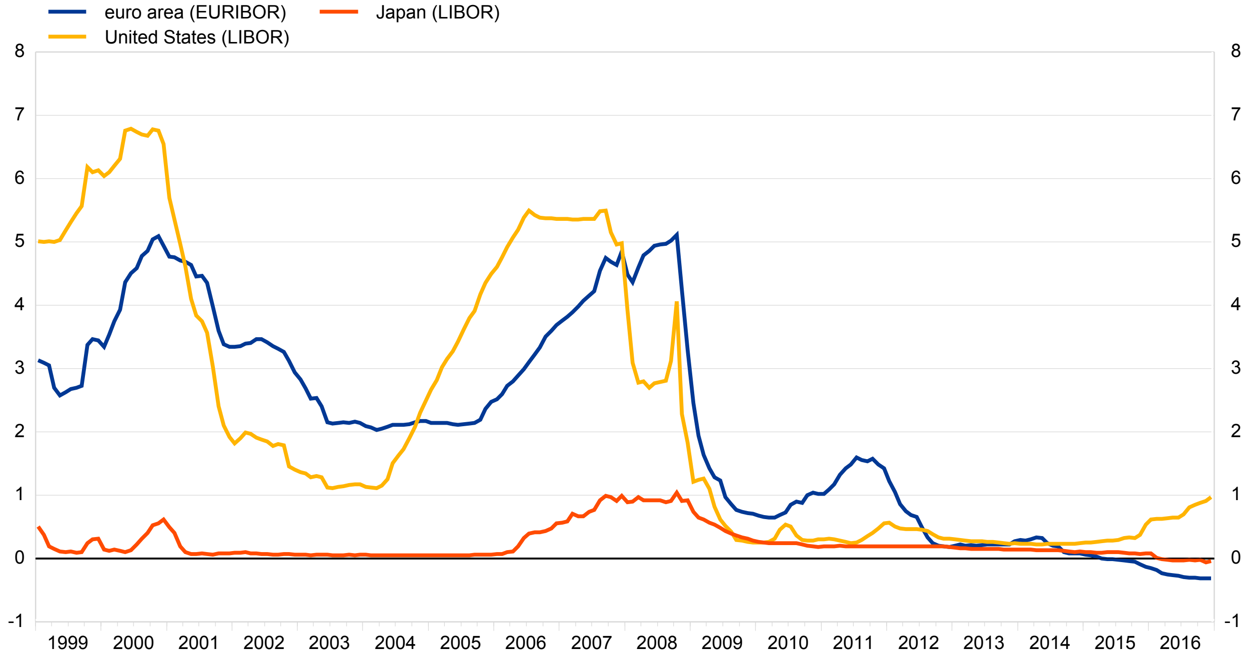
1 Financial and monetary developments

1.5 Money markets: 3-month interbank offered rates [1)]
(percentages per annum; period averages)

	1999-2016 [2)]	1999-2008 [2)]	2009-2016	2013	2014	2015	2016
Euro area - EURIBOR	2.09	3.35	0.52	0.22	0.21	-0.02	-0.26
Bulgaria - SOFIBOR	3.19	4.57	2.31	1.14	0.78	0.54	0.15
Czech Republic - PRIBOR	2.45	3.70	0.89	0.46	0.36	0.31	0.29
Denmark - CIBOR	2.36	3.64	0.76	0.27	0.31	-0.12	-0.15
Croatia - ZIBOR	5.44	7.54	2.81	1.52	0.97	1.23	0.85
Hungary - BUBOR	7.42	9.70	4.58	4.32	2.41	1.61	0.99
Poland - WIBOR	6.55	9.11	3.35	3.03	2.52	1.75	1.70
Romania - ROBOR	15.46	24.65	4.82	4.23	2.54	1.33	0.78
Sweden - STIBOR	2.33	3.44	0.93	1.19	0.66	-0.19	-0.49
United Kingdom - LIBOR	2.08	3.35	0.48	0.15	0.18	-0.02	-0.28
United States - LIBOR	2.26	3.73	0.42	0.27	0.23	0.32	0.74
Japan - LIBOR	0.24	0.29	0.18	0.15	0.13	0.09	-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)

	2003-2016	2003-2008	2009-2016	2013	2014	2015	2016
Belgium	3.13	4.24	2.30	2.28	2.26	1.98	1.77
Germany	3.62	4.75	2.78	2.57	2.48	2.09	1.88
Estonia	-	-	3.61	3.16	2.97	2.51	2.49
Ireland	4.16	5.10	3.46	3.60	3.69	3.06	2.80
Greece	5.71	5.78	5.66	6.25	5.83	5.13	4.92
Spain	3.58	4.21	3.10	3.58	3.36	2.61	2.12
France	3.10	4.11	2.33	2.18	2.11	1.74	1.60
Italy	4.00	4.90	3.34	4.00	3.56	2.67	2.15
Cyprus	-	-	5.92	6.30	5.82	4.78	4.19
Latvia	-	-	-	-	3.51	3.33	2.87
Lithuania	-	-	-	-	-	2.50	2.32
Luxembourg	2.88	4.03	2.02	1.77	1.65	1.56	1.34
Malta	-	-	4.39	4.48	4.26	3.94	3.47
Netherlands	3.21	4.30	2.39	2.36	2.32	1.84	1.48
Austria	3.08	4.26	2.20	2.01	1.97	1.82	1.71
Portugal	5.11	5.34	4.93	5.64	5.00	3.96	3.29
Slovenia	4.41	4.36	4.45	4.85	4.39	3.12	2.43
Slovakia	-	-	2.87	2.62	2.66	2.41	2.24
Finland	2.96	4.05	2.14	2.08	2.13	1.85	1.71
Euro area 2)	3.56	4.51	2.85	2.98	2.78	2.25	1.92

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)

	2003-2016	2003-2008	2009-2016	2013	2014	2015	2016
Belgium	3.77	4.38	3.31	3.45	3.17	2.49	2.11
Germany	3.77	4.81	2.98	2.76	2.50	1.96	1.76
Estonia	-	-	2.96	2.72	2.52	2.30	2.32
Ireland	3.67	4.13	3.32	3.42	3.44	3.41	3.25
Greece	3.86	4.53	3.36	2.81	2.93	2.63	2.69
Spain	3.39	4.16	2.81	2.99	2.93	2.23	1.94
France	3.67	4.25	3.24	3.18	2.95	2.31	1.87
Italy	3.78	4.49	3.26	3.69	3.20	2.51	2.13
Cyprus	-	-	4.54	4.88	4.42	3.63	3.08
Latvia	-	-	-	-	3.33	3.08	2.88
Lithuania	-	-	-	-	-	1.88	1.94
Luxembourg	2.94	4.02	2.12	2.13	2.03	1.86	1.69
Malta	-	-	3.17	3.22	2.93	2.79	2.81
Netherlands	4.15	4.54	3.87	3.78	3.35	2.90	2.59
Austria	3.30	4.28	2.57	2.39	2.29	2.01	1.90
Portugal	3.48	4.17	2.96	3.25	3.19	2.38	1.90
Slovenia	4.24	5.55	3.26	3.20	3.21	2.53	2.20
Slovakia	-	-	4.12	4.10	3.42	2.74	2.04
Finland	2.74	3.85	1.90	2.01	1.81	1.36	1.16
Euro area 2)	3.66	4.42	3.09	3.07	2.80	2.26	1.97

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)

	2003-2016	2003-2008	2009-2016	2013	2014	2015	2016
Belgium	1.42	2.79	0.40	0.34	0.35	0.15	-0.03
Germany	1.49	2.86	0.47	0.24	0.24	0.16	0.02
Estonia	-	-	0.65	0.30	0.31	0.23	0.17
Ireland	1.67	2.75	0.87	0.57	0.41	0.15	0.05
Greece	-	-	-	-	-	-	-
Spain	2.00	2.90	1.32	1.55	0.80	0.36	0.21
France	1.76	2.89	0.92	0.81	0.74	0.31	0.21
Italy	1.99	2.88	1.33	1.80	1.22	0.87	1.04
Cyprus	-	-	2.74	2.68	2.44	1.72	1.41
Latvia	-	-	-	-	-	-	-
Lithuania	-	-	0.62	0.36	0.22	0.17	0.19
Luxembourg	-	-	-	-	-	-	-
Malta	-	-	1.55	1.97	1.25	0.89	0.78
Netherlands	-	-	-	0.19	0.17	0.06	-0.03
Austria	1.67	2.92	0.74	0.45	0.44	0.32	0.26
Portugal	2.10	2.97	1.46	1.57	0.96	0.46	0.25
Slovenia	-	-	1.29	1.66	0.72	0.27	0.11
Slovakia	-	-	0.55	0.44	0.39	0.24	0.18
Finland	1.48	2.80	0.50	0.29	0.42	0.30	0.39
Euro area (2)	1.72	2.86	0.87	0.94	0.61	0.32	0.18

Source: ECB MFI interest rate statistics.
Note: Data on deposit interest rates for Greece, Latvia 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.

1.7.2 Households 1)

	2003-2016	2003-2008	2009-2016	2013	2014	2015	2016
Belgium	1.84	2.75	1.16	1.29	1.17	1.00	0.65
Germany	1.79	2.80	1.04	0.86	0.69	0.47	0.42
Estonia	1.70	2.75	0.92	0.53	0.55	0.58	0.54
Ireland	1.80	2.64	1.17	0.94	0.64	0.29	0.16
Greece	-	-	-	-	-	-	-
Spain	2.22	2.89	1.72	1.83	0.99	0.46	0.21
France	2.39	2.89	2.01	2.18	2.19	1.68	1.24
Italy	1.88	2.07	1.73	2.14	1.59	1.20	1.08
Cyprus	-	-	3.21	2.95	2.56	1.77	1.53
Latvia	-	-	1.23	0.49	0.50	0.56	0.56
Lithuania	-	-	1.01	0.54	0.43	0.28	0.24
Luxembourg	-	-	-	-	-	-	-
Malta	-	-	2.01	2.26	1.83	1.34	1.17
Netherlands	-	-	-	2.33	2.09	1.92	1.68
Austria	1.88	2.89	1.11	0.89	0.74	0.45	0.37
Portugal	2.25	2.67	1.94	2.16	1.59	0.75	0.39
Slovenia	-	-	1.80	2.25	1.25	0.58	0.33
Slovakia	-	-	1.86	1.71	1.67	1.68	1.34
Finland	2.03	2.97	1.32	1.10	1.09	0.96	0.56
Euro area (2)	2.24	2.81	1.80	1.99	1.35	0.81	0.56

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.

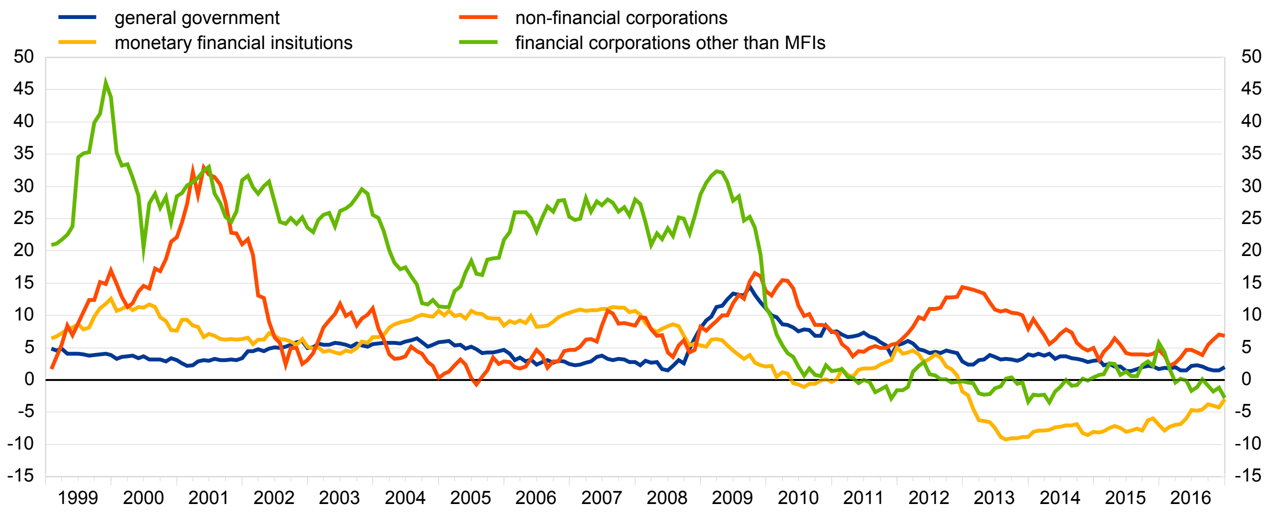
1 Financial and monetary developments

1.8 Debt securities issued by euro area residents in all currencies
(annual percentage changes; period averages)

	1999-2016	1999-2008	2009-2016	2013	2014	2015	2016
Belgium	3.5	2.6	3.0	1.4	1.4	1.3	4.2
Germany	2.1	4.8	-1.2	-4.1	-2.6	-0.6	-1.3
Estonia	-	-	6.7	9.9	10.4	-0.5	2.4
Ireland	5.1	9.9	-2.2	-3.0	-3.5	-0.5	-3.3
Greece	2.0	12.6	-11.7	-25.6	-11.4	-4.6	-28.1
Spain	8.5	15.6	-0.7	-4.1	-6.9	-4.5	-0.7
France	6.2	8.4	3.2	0.1	2.7	0.6	1.4
Italy	4.1	6.4	0.4	1.5	-1.3	-3.8	-2.3
Cyprus	-	-	1.4	2.5	-5.6	-2.9	4.7
Latvia	-	-	21.2	34.4	34.9	8.9	10.9
Lithuania	-	-	1.2	-	3.7	-2.1	6.7
Luxembourg	6.0	0.2	12.5	20.8	13.3	16.6	2.3
Malta	-	-	9.4	6.8	14.3	13.1	11.1
Netherlands	7.1	12.6	0.6	-0.6	-0.6	0.9	0.2
Austria	4.7	9.6	-1.0	-2.0	-1.7	-3.3	-0.7
Portugal	6.8	10.4	0.2	-2.1	-7.5	-6.7	1.1
Slovenia	-	-	8.6	11.9	29.6	3.6	1.6
Slovakia	11.8	13.7	9.4	13.7	7.7	1.6	3.1
Finland	4.9	3.6	5.7	8.5	7.2	-0.9	1.3
Euro area	4.9	7.7	0.9	-0.6	-0.7	-0.6	-0.3

Source: ECB.

Chart 1.8 Debt securities issued by euro area residents, by sector
(annual percentage changes)



Source: ECB.

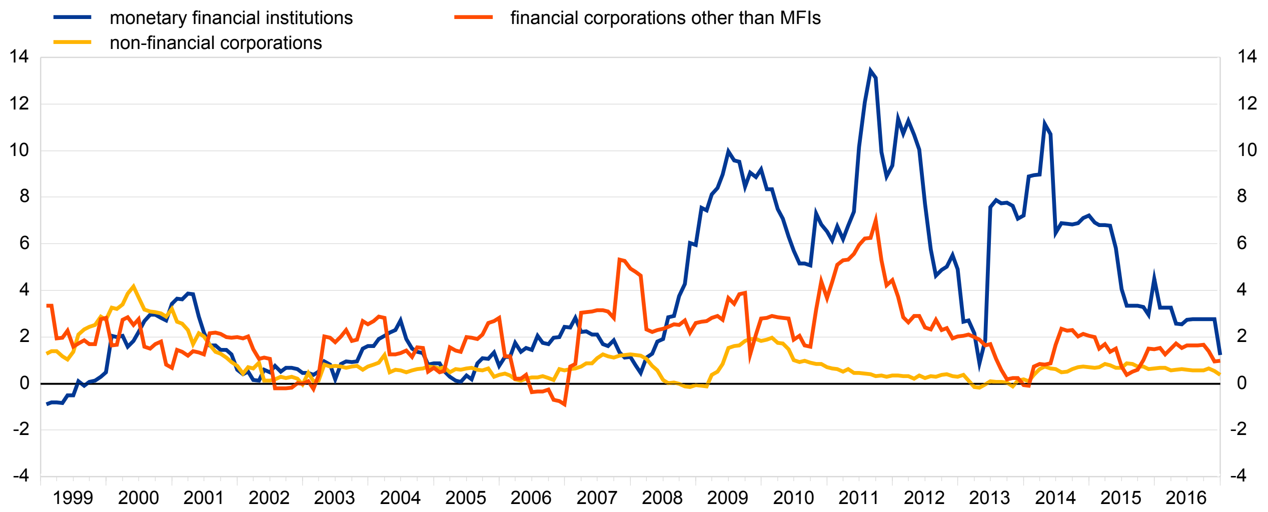
1 Financial and monetary developments

1.9 Listed shares issued by euro area residents
(annual percentage changes; period averages)

	1999-2016	1999-2008	2009-2016	2013	2014	2015	2016
Belgium	0.2	0.1	0.4	0.9	1.3	1.0	1.1
Germany	1.2	1.4	0.9	0.3	0.7	0.9	0.3
Estonia	-	-	-7.3	-4.5	-3.8	-4.8	-4.0
Ireland	2.6	1.0	0.5	-6.1	-0.7	0.3	-0.1
Greece	7.8	1.5	16.9	39.6	35.1	6.8	33.9
Spain	1.2	1.1	1.2	0.8	0.3	2.5	1.1
France	0.8	0.7	0.7	0.9	0.7	0.8	0.5
Italy	1.6	1.1	1.8	0.7	1.4	1.8	1.4
Cyprus	-	-	16.2	9.3	13.8	23.1	9.2
Latvia	-	-	0.5	0.0	0.1	0.6	1.7
Lithuania	-	-	-0.4	-	-0.7	-3.9	0.3
Luxembourg	6.0	5.7	7.3	2.7	9.6	6.9	11.5
Malta	-	-	4.6	2.2	5.1	8.0	6.0
Netherlands	0.3	0.3	0.3	-0.6	0.7	0.0	0.6
Austria	5.6	8.7	2.1	1.3	5.2	2.3	0.4
Portugal	2.3	2.3	2.2	2.3	3.2	3.4	0.3
Slovenia	-	-	0.9	2.8	1.1	0.5	0.0
Slovakia	-	-	0.5	-0.1	0.0	-0.1	-0.2
Finland	0.2	-0.5	1.1	1.4	2.3	0.9	0.8
Euro area	1.2	1.1	1.1	0.6	1.4	1.2	0.9

Source: ECB.

Chart 1.9 Listed shares issued by euro area residents, by sector
(annual percentage changes)



Source: ECB.

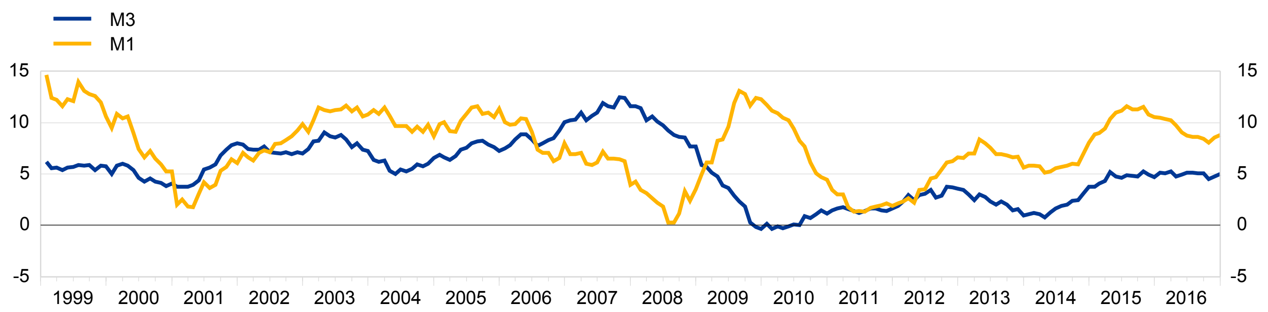
1 Financial and monetary developments

1.10 Monetary aggregates, components and counterparts 1)
(annual percentage changes at the end of each year; period averages; seasonally adjusted)

	1999-2016	1999-2008	2009-2016	2013	2014	2015	2016
Components of M3							
M3	5.3	7.5	2.5	0.9	3.8	4.7	5.0
M2	5.5	7.3	3.3	2.4	3.7	5.2	4.8
M1	7.5	7.8	7.2	5.6	8.0	10.5	8.8
Currency in circulation	7.3	9.0	5.2	5.3	6.5	6.8	3.5
Overnight deposits	7.6	7.6	7.6	5.7	8.4	11.3	9.8
M2-M1 (other short-term deposits)	2.9	7.1	-2.0	-1.8	-2.3	-3.3	-2.6
Deposits with an agreed maturity of up to two years	1.9	10.3	-7.7	-6.4	-5.4	-8.6	-7.6
Deposits redeemable at notice of up to three months	3.6	3.3	4.0	2.2	0.2	0.6	0.7
M3-M2 (marketable instruments)	2.7	8.8	-4.5	-16.1	4.4	-3.5	8.8
Repurchase agreements	-0.5	6.2	-8.3	-8.9	2.9	-39.1	-5.8
Money market fund shares	4.2	9.4	-2.0	-10.4	2.5	12.0	8.8
Debt securities issued with a maturity of up to two years	0.2	11.9	-12.8	-38.0	19.9	-25.3	23.8
Counterparts of M3 2)							
MFI liabilities:							
Central government holdings	3.9	7.2	0.0	-14.2	-1.6	3.6	10.9
Longer-term financial liabilities vis-a-vis other euro area residents	3.8	6.6	0.3	-1.1	-2.2	-3.1	-2.1
Deposits with an agreed maturity of over two years	2.9	5.8	-0.6	-0.8	-5.1	-4.8	-3.4
Deposits redeemable at notice of over three months	-3.2	-0.9	-6.1	-13.5	2.2	-14.5	-11.5
Debt securities issued with a maturity of over two years	2.6	7.3	-3.0	-5.1	-6.1	-8.6	-5.4
Capital and reserves	6.4	7.4	5.3	3.8	4.5	4.3	2.0
MFI assets:							
Credit to euro area residents	4.5	6.9	1.5	-2.0	-0.2	2.3	4.7
Credit to general government	3.2	0.6	6.6	-0.7	2.1	7.9	11.7
of which: loans	0.3	-0.1	0.8	-6.3	1.5	-1.9	-3.1
Credit to the private sector 3)	4.8	8.7	0.2	-2.4	-0.8	0.7	2.5
of which: loans 4)	4.7	8.3	0.3	-2.4	-0.3	0.7	2.3

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

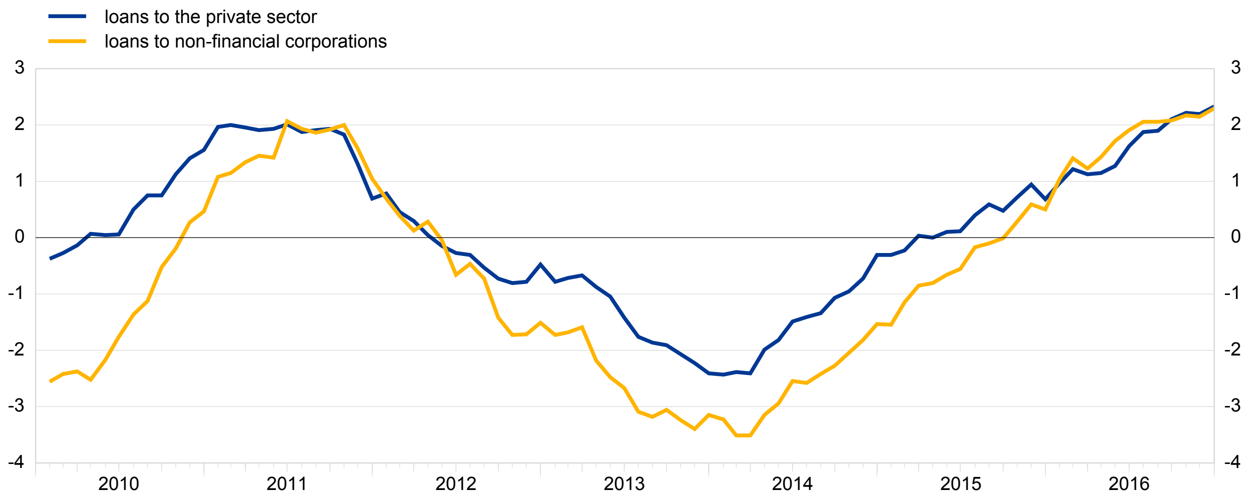
1.11 MFI loans to non-financial corporations [1)]
(annual percentage changes at the end of each year; period averages; not seasonally adjusted)

	2010-2016	2010	2011	2012	2013	2014	2015	2016
Belgium	2.9	4.9	2.1	1.3	1.1	0.7	3.8	6.9
Germany	0.3	-0.8	0.3	0.6	-1.9	-0.5	0.8	3.5
Estonia	1.8	-5.1	-4.9	3.1	3.6	3.6	6.4	6.6
Ireland	-4.5	-6.5	-2.4	-4.0	-5.7	-6.5	-5.3	-0.7
Greece	-2.3	0.0	-2.4	-6.2	-3.2	-2.8	-1.3	0.0
Spain	-4.5	-0.9	-4.0	-7.6	-9.8	-6.6	-1.2	-0.8
France	2.7	1.5	4.7	1.3	-0.2	2.9	3.3	5.3
Italy	-0.9	1.9	2.5	-2.2	-5.5	-2.5	-0.5	0.3
Cyprus	0.0	2.6	8.2	4.6	-5.7	-0.8	0.8	-8.4
Latvia	-0.5	-	-5.3	3.3	-0.6	-6.7	1.1	5.9
Lithuania	0.1	-9.5	0.3	2.5	-3.2	-1.2	3.3	9.8
Luxembourg	-0.3	-6.8	-5.4	-7.5	-3.0	2.9	7.5	12.0
Malta	-1.4	-2.0	2.8	-1.7	-9.1	4.2	-10.3	7.9
Netherlands	0.4	1.7	3.7	2.8	1.7	-3.6	-3.8	0.5
Austria	1.4	1.9	3.8	0.5	-0.2	1.1	0.7	2.1
Portugal	-2.8	1.7	-2.7	-5.2	-3.0	-6.8	-1.3	-1.9
Slovenia	-5.5	-0.1	-3.4	-4.8	-7.8	-13.9	-7.6	-0.1
Slovakia	3.1	1.6	7.6	-2.3	1.7	1.9	7.3	4.2
Finland	5.6	4.2	9.9	4.7	5.7	4.9	5.3	4.4
Euro area	-0.3	0.4	1.0	-1.6	-3.2	-1.5	0.5	2.3
Bulgaria	2.8	2.7	6.0	5.4	1.4	2.4	-0.3	2.2
Czech Republic	4.0	1.7	6.3	2.4	2.4	1.7	6.3	7.5
Denmark	-0.6	-1.9	-4.5	-2.0	1.1	0.5	-0.1	3.1
Croatia	-1.8	-	7.2	-12.3	0.5	-3.4	-3.2	1.5
Hungary	-2.1	-3.0	-5.9	-3.6	-1.3	1.8	-7.1	4.8
Poland	5.3	-1.2	14.0	5.8	1.5	5.1	7.9	4.9
Romania	0.8	9.4	9.9	1.2	-5.7	-3.5	-2.9	-1.8
Sweden	3.2	3.4	6.6	2.3	1.0	2.5	2.6	4.4
United Kingdom	-3.5	-7.1	-5.7	-5.1	-5.6	-3.4	-0.3	3.2

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 for euro area countries 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.

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.

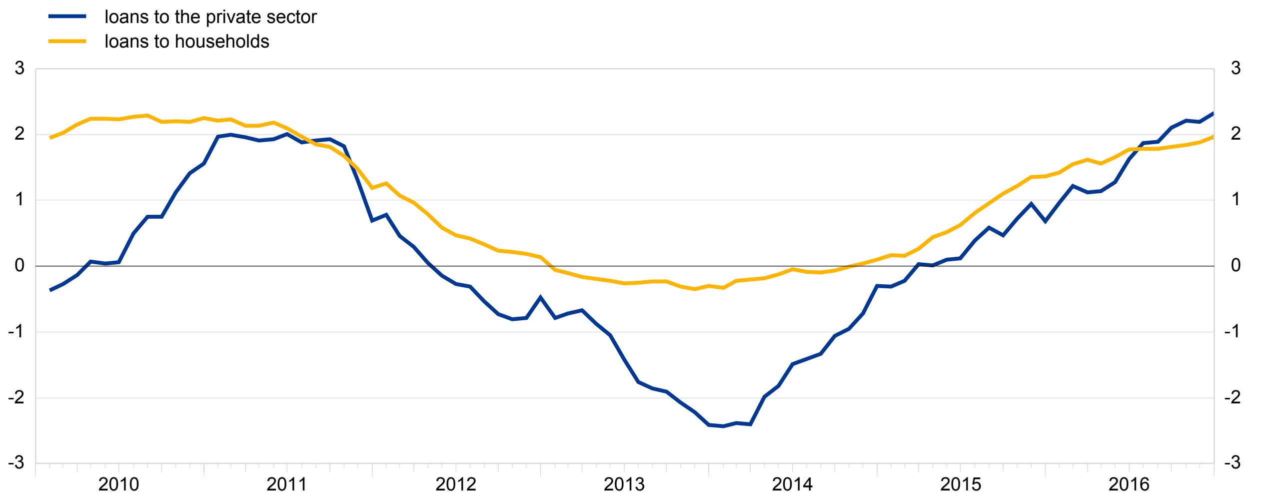
1) Private sector refers to euro area non-MFIs excluding general government. Data are adjusted for loan sales and securitisation (resulting in derecognition from the MFI statistical balance sheet) as well as for positions arising from notional cash pooling services provided by MFIs.

1.12 MFI loans to households [1)]
(annual percentage changes at the end of each year; period averages; not seasonally adjusted)

	2010-2016	2010	2011	2012	2013	2014	2015	2016
Belgium	4.4	6.3	5.3	4.1	2.2	3.8	4.3	5.1
Germany	1.5	0.7	0.7	1.3	1.2	1.5	2.8	2.8
Estonia	0.6	-3.0	-2.2	-2.3	0.4	2.5	3.9	5.3
Ireland	-3.8	-5.4	-3.8	-3.8	-3.9	-3.6	-3.7	-2.6
Greece	-3.0	-0.6	-4.3	-4.2	-3.0	-3.0	-2.8	-2.8
Spain	-2.8	-0.3	-2.7	-3.9	-5.0	-3.9	-2.2	-1.4
France	3.6	6.1	4.5	2.5	2.6	1.9	3.5	4.4
Italy	1.2	4.9	3.4	-0.5	-1.3	-0.5	0.7	1.9
Cyprus	0.7	9.1	4.7	1.7	-4.6	-2.7	-1.0	-1.2
Latvia	-3.7	-	-6.2	-5.3	-4.8	-3.9	-2.5	0.6
Lithuania	0.8	-5.2	-1.7	-1.5	0.0	1.5	4.9	8.2
Luxembourg	4.3	2.2	5.2	5.6	3.9	4.2	4.8	4.0
Malta	5.7	6.5	6.2	4.4	4.3	6.8	6.5	5.0
Netherlands	-0.3	1.6	0.8	-0.4	-1.7	-1.3	-0.7	-0.6
Austria	1.3	0.7	1.5	0.6	0.6	1.1	1.9	2.9
Portugal	-2.5	2.1	-2.2	-4.4	-4.1	-3.5	-2.8	-2.2
Slovenia	1.3	8.0	1.7	-1.7	-2.8	-1.5	0.6	4.9
Slovakia	12.0	12.5	11.1	10.3	10.3	13.2	13.1	13.4
Finland	3.7	6.1	5.6	4.9	2.1	1.9	2.6	2.6
Euro area	0.9	2.2	1.2	0.1	-0.3	0.1	1.4	2.0
Bulgaria	0.5	0.2	0.3	-0.3	0.4	-1.0	-0.3	4.1
Czech Republic	6.1	7.2	6.4	4.5	5.0	4.5	6.8	8.2
Denmark	0.5	1.4	0.8	0.6	-1.6	0.2	0.8	1.3
Croatia	-1.2	-	-2.3	-1.5	-1.3	-1.0	-1.8	0.6
Hungary	-7.6	-4.4	-16.7	-6.0	-5.8	-7.1	-12.0	-0.2
Poland	5.1	10.3	2.7	7.0	3.9	4.1	4.6	3.6
Romania	2.1	3.6	4.6	-2.0	-1.4	0.3	4.1	6.0
Sweden	6.1	8.0	5.3	4.4	4.9	5.8	7.5	7.1
United Kingdom	0.7	-5.6	-0.2	0.6	0.6	2.8	3.3	4.0

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 for euro area countries 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.

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

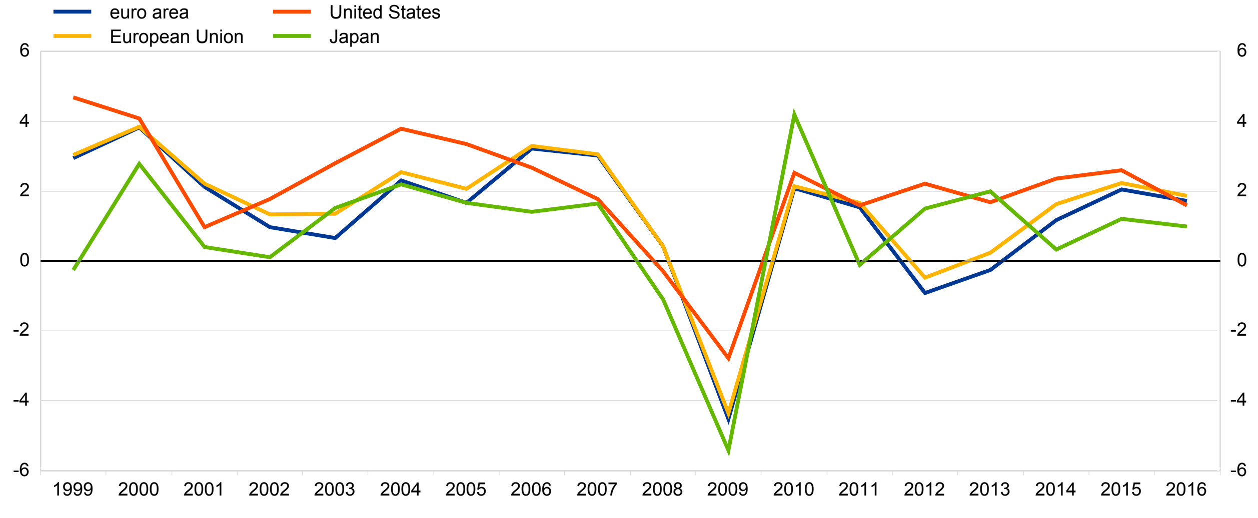
(chain-linked volumes; annual percentage changes)

	1999-2016 [1),2)]	1999-2008 [1)]	2009-2016 [2)]	2013	2014	2015	2016
Belgium	1.6	2.3	0.8	-0.1	1.7	1.5	1.2
Germany	1.3	1.6	1.0	0.5	1.6	1.7	1.9
Estonia	3.4	5.7	0.6	1.4	2.8	1.4	1.6
Ireland	4.8	5.3	4.2	1.1	8.5	26.3	.
Greece	0.2	3.5	-3.7	-3.2	0.4	-0.2	0.0
Spain	1.9	3.6	-0.2	-1.7	1.4	3.2	3.2
France	1.4	2.0	0.6	0.6	0.6	1.3	1.2
Italy	0.3	1.2	-0.8	-1.7	0.1	0.8	0.9
Cyprus	1.9	4.1	-0.8	-6.0	-1.5	1.7	2.8
Latvia	3.6	6.6	0.0	2.6	2.1	2.7	2.0
Lithuania	3.7	6.1	0.8	3.5	3.5	1.8	2.3
Luxembourg	2.8	3.6	2.1	4.2	4.7	3.5	.
Malta	3.1	2.4	3.7	4.5	8.3	7.4	5.0
Netherlands	1.6	2.5	0.4	-0.2	1.4	2.0	2.1
Austria	1.6	2.4	0.6	0.1	0.6	1.0	1.5
Portugal	0.7	1.6	-0.5	-1.1	0.9	1.6	1.4
Slovenia	2.3	4.3	-0.3	-1.1	3.1	2.3	2.5
Slovakia	3.6	5.1	1.9	1.5	2.6	3.8	3.3
Finland	1.6	3.3	-0.5	-0.8	-0.6	0.3	1.6
Euro area	1.3	2.1	0.3	-0.3	1.2	2.0	1.7
Bulgaria	3.1	4.7	1.1	0.9	1.3	3.6	3.4
Czech Republic	2.7	4.0	0.9	-0.5	2.7	4.5	2.4
Denmark	1.2	1.8	0.5	0.9	1.7	1.6	1.1
Croatia	1.5	3.7	-1.1	-1.1	-0.5	1.6	2.9
Hungary	2.2	3.4	0.6	2.1	4.0	3.1	2.0
Poland	3.7	4.2	3.1	1.4	3.3	3.9	2.8
Romania	3.5	5.4	1.1	3.5	3.1	3.9	4.8
Sweden	2.4	3.0	1.8	1.2	2.6	4.1	3.3
United Kingdom	1.9	2.5	1.2	1.9	3.1	2.2	1.8
European Union	1.5	2.3	0.6	0.2	1.6	2.2	1.9
United States	2.1	2.6	1.5	1.7	2.4	2.6	1.6
Japan	0.8	1.0	0.6	2.0	0.3	1.2	1.0

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Data for Malta available since 2000, data for Luxembourg available since 2001.
2) Where data are not available for 2016, the average indicated is for the periods 1999-2015 and 2009-2015.

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

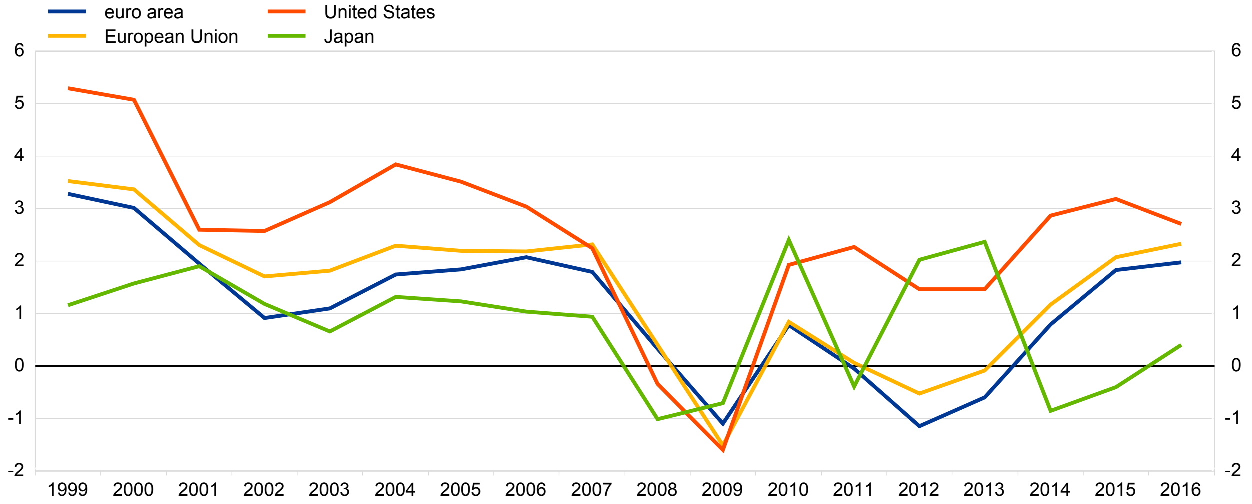
(chain-linked volumes; annual percentage changes)

	1999-2016 [1),2)]	1999-2008 [1)]	2009-2016 [2)]	2013	2014	2015	2016
Belgium	1.2	1.4	0.9	0.7	0.6	1.1	0.7
Germany	1.0	0.9	1.1	0.7	0.9	2.0	2.0
Estonia	3.9	6.6	0.7	3.8	3.3	4.7	4.1
Ireland	3.1	5.5	-0.2	-0.3	1.8	5.0	.
Greece	0.4	3.7	-3.4	-2.6	0.4	-0.2	1.4
Spain	1.5	3.3	-0.6	-3.1	1.6	2.9	3.2
France	1.7	2.3	0.9	0.5	0.7	1.5	1.9
Italy	0.4	1.0	-0.5	-2.5	0.3	1.6	1.4
Cyprus	2.6	5.3	-0.7	-5.9	0.7	1.9	2.9
Latvia	3.8	6.5	0.5	5.0	1.3	3.5	3.4
Lithuania	4.6	8.1	0.4	4.3	4.3	4.1	5.6
Luxembourg	2.2	2.3	2.1	2.6	2.7	1.8	.
Malta	2.0	1.7	2.3	2.3	2.8	5.2	3.8
Netherlands	0.9	1.6	0.0	-1.0	0.3	1.8	1.8
Austria	1.2	1.8	0.6	-0.1	-0.3	0.0	1.5
Portugal	0.9	2.0	-0.4	-1.2	2.3	2.6	2.3
Slovenia	1.7	3.1	0.1	-4.0	2.0	0.5	2.8
Slovakia	2.8	4.6	0.6	-0.8	1.4	2.2	2.9
Finland	2.2	3.2	0.9	-0.5	0.8	1.5	2.0
Euro area	1.1	1.8	0.3	-0.6	0.8	1.8	2.0
Bulgaria	4.5	7.3	1.0	-2.5	2.7	4.5	2.1
Czech Republic	2.2	3.3	0.9	0.5	1.8	3.0	2.9
Denmark	1.1	1.7	0.4	0.3	0.5	1.9	2.1
Croatia	1.3	3.5	-1.4	-1.8	-1.6	1.2	3.3
Hungary	2.0	3.7	0.0	0.3	2.5	3.4	5.0
Poland	3.3	3.9	2.5	0.3	2.4	3.2	3.6
Romania	4.9	7.9	1.3	0.7	4.7	6.0	7.4
Sweden	2.4	2.7	2.0	1.9	2.1	2.7	2.2
United Kingdom	2.1	3.1	0.9	1.6	2.2	2.4	3.0
European Union	1.5	2.2	0.5	-0.1	1.2	2.1	2.3
United States	2.5	3.1	1.8	1.5	2.9	3.2	2.7
Japan	0.8	1.0	0.6	2.4	-0.9	-0.4	0.4

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Data for Malta available since 2000, data for Luxembourg available since 2001.
2) Where data are not available for 2016, the average indicated is for the periods 1999-2015 and 2009-2015.

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

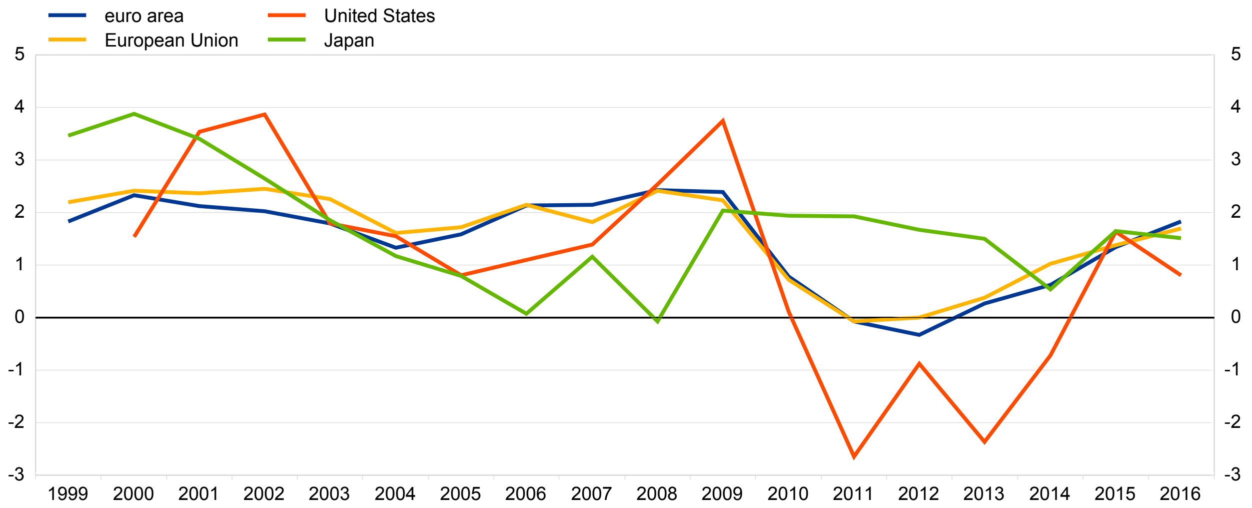
(chain-linked volumes; annual percentage changes)

	1999-2016 1),2)	1999-2008 1)	2009-2016 2)	2013	2014	2015	2016
Belgium	1.4	1.9	0.9	0.1	1.4	0.5	0.2
Germany	1.4	1.0	1.9	1.2	1.2	2.7	4.0
Estonia	2.2	3.0	1.2	1.9	2.7	3.4	1.0
Ireland	2.7	5.3	-1.0	-1.3	4.5	0.3	.
Greece	0.5	3.5	-3.2	-6.4	-1.4	0.0	-2.1
Spain	2.8	5.0	0.1	-2.1	-0.3	2.0	0.8
France	1.5	1.6	1.5	1.5	1.2	1.4	1.5
Italy	0.6	1.4	-0.4	-0.3	-0.7	-0.7	0.6
Cyprus	1.4	3.8	-1.5	-8.2	-7.9	-0.6	-1.4
Latvia	1.2	2.8	-0.9	1.6	2.1	3.1	2.7
Lithuania	0.8	1.4	-0.1	0.7	0.3	0.9	1.3
Luxembourg	2.9	2.8	3.0	1.9	0.0	2.3	.
Malta	2.3	2.8	1.7	-0.3	6.5	3.8	-3.1
Netherlands	2.2	3.4	0.6	-0.1	0.3	0.2	0.8
Austria	1.4	1.7	1.0	0.7	0.8	2.1	1.3
Portugal	0.8	2.2	-0.8	-2.0	-0.5	0.8	0.8
Slovenia	1.8	3.2	0.1	-2.1	-1.2	2.5	2.6
Slovakia	2.8	3.2	2.3	2.2	5.3	5.4	1.6
Finland	1.0	1.6	0.3	1.1	-0.5	0.1	0.0
Euro area	1.5	2.0	0.8	0.3	0.6	1.3	1.8
Bulgaria	2.2	4.2	-0.2	0.6	0.1	1.4	0.6
Czech Republic	1.5	2.1	0.8	2.5	1.1	2.0	1.5
Denmark	1.5	2.0	0.8	-0.1	1.2	0.6	-0.2
Croatia	1.1	2.0	0.0	0.3	-0.8	-0.3	1.7
Hungary	1.6	1.9	1.2	4.1	4.5	1.0	0.1
Poland	3.2	4.0	2.1	2.5	4.1	2.3	3.8
Romania	0.6	1.2	-0.2	-4.6	0.8	0.1	2.5
Sweden	1.2	0.7	1.7	1.3	1.5	2.5	3.1
United Kingdom	2.2	3.1	1.0	0.3	2.3	1.3	0.8
European Union	1.6	2.1	0.9	0.4	1.0	1.4	1.7
United States	1.0	2.0	-0.1	-2.4	-0.7	1.6	0.8
Japan	1.7	1.8	1.6	1.5	0.5	1.6	1.5

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Data for Malta available since 2000, data for Luxembourg available since 2001.
2) Where data are not available for 2016, the average indicated is for the periods 1999-2015 and 2009-2015.

Chart 2.3 Government consumption

(chain-linked volumes; annual percentage changes)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

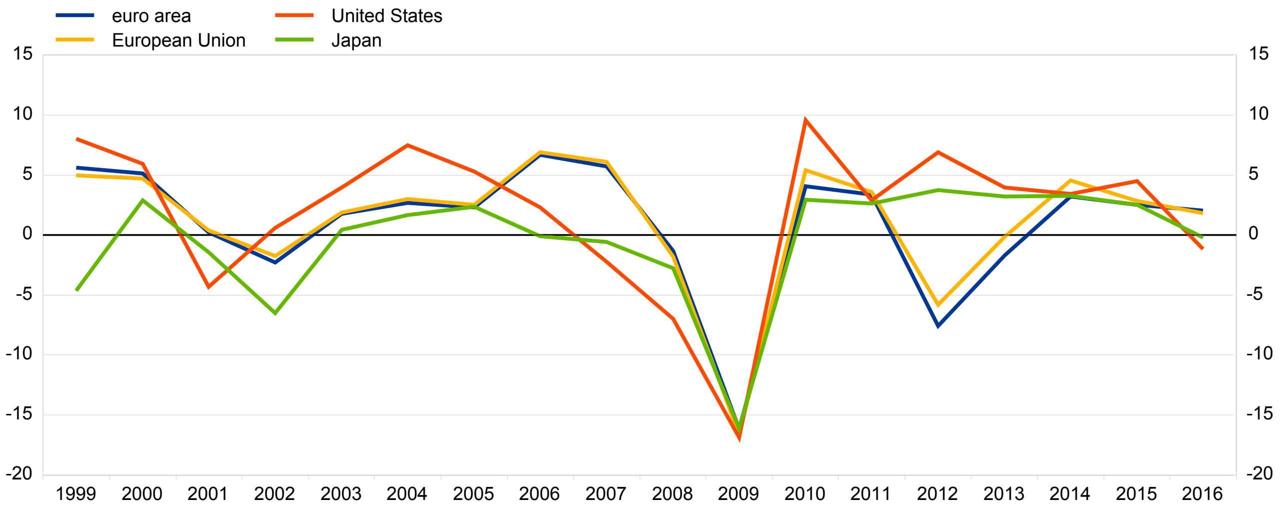
2 Economic activity

2.4 Gross capital formation
(chain-linked volumes; annual percentage changes)

	1999-2016 1),2)	1999-2008 1)	2009-2016 2)	2013	2014	2015	2016
Belgium	2.0	3.6	0.2	-3.9	6.9	3.6	0.3
Germany	0.3	0.8	-0.2	1.3	3.2	-0.6	1.3
Estonia	3.4	7.7	-1.8	-2.8	0.8	-9.0	0.7
Ireland	4.4	5.1	3.3	-6.0	24.9	26.7	.
Greece	-3.7	4.4	-13.0	-9.9	4.2	-8.9	-0.8
Spain	1.2	5.3	-3.6	-4.6	5.4	6.5	3.8
France	1.8	3.4	-0.1	0.3	2.1	1.5	2.6
Italy	-0.4	2.4	-3.7	-5.6	1.0	2.9	-0.1
Cyprus	1.1	8.5	-7.5	-25.5	-3.2	13.4	14.3
Latvia	3.5	11.1	-5.3	-5.8	-4.3	-0.9	2.3
Lithuania	3.3	8.9	-3.2	1.8	3.0	22.7	-8.5
Luxembourg	3.3	4.9	1.8	-1.4	8.9	3.3	.
Malta	2.1	0.9	3.4	9.0	-2.3	49.1	-2.1
Netherlands	1.0	2.3	-0.8	-3.9	3.2	6.2	4.7
Austria	1.0	1.7	0.2	-0.1	0.4	0.5	2.6
Portugal	-2.1	0.4	-5.1	-5.1	5.1	4.6	-0.9
Slovenia	0.7	6.9	-6.5	4.3	4.3	2.8	1.0
Slovakia	1.4	3.6	-1.4	1.8	6.2	10.8	-4.2
Finland	1.1	3.2	-1.5	-4.9	-1.8	2.7	4.0
Euro area	0.8	2.6	-1.5	-1.7	3.2	2.5	2.1
Bulgaria	4.7	15.8	-5.4	-3.3	4.4	2.0	0.9
Czech Republic	2.6	5.4	-0.8	-5.1	8.6	10.0	-1.2
Denmark	1.1	2.5	-0.7	3.4	4.3	0.9	3.0
Croatia	1.5	7.9	-5.9	-0.4	-3.8	2.6	4.1
Hungary	-0.2	2.3	-3.2	5.8	9.8	-2.5	-5.0
Poland	3.6	5.0	1.8	-5.8	12.8	4.9	-0.2
Romania	5.4	12.2	-2.5	0.5	1.7	7.5	2.6
Sweden	3.3	4.3	2.1	1.6	6.1	8.0	6.1
United Kingdom	1.7	1.1	2.5	10.0	9.4	1.1	-2.6
European Union	1.1	2.7	-0.8	-0.1	4.5	2.8	1.8
United States	1.6	1.9	1.3	4.0	3.4	4.5	-1.2
Japan	-0.5	-0.9	0.0	3.2	3.3	2.5	-0.2

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Data for Malta and Bulgaria available since 2000, data for Luxembourg available since 2001.
2) Where data are not available for 2016, the average indicated is for the periods 1999-2015 and 2009-2015.

Chart 2.4 Gross capital formation
(chain-linked volumes; annual percentage changes)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

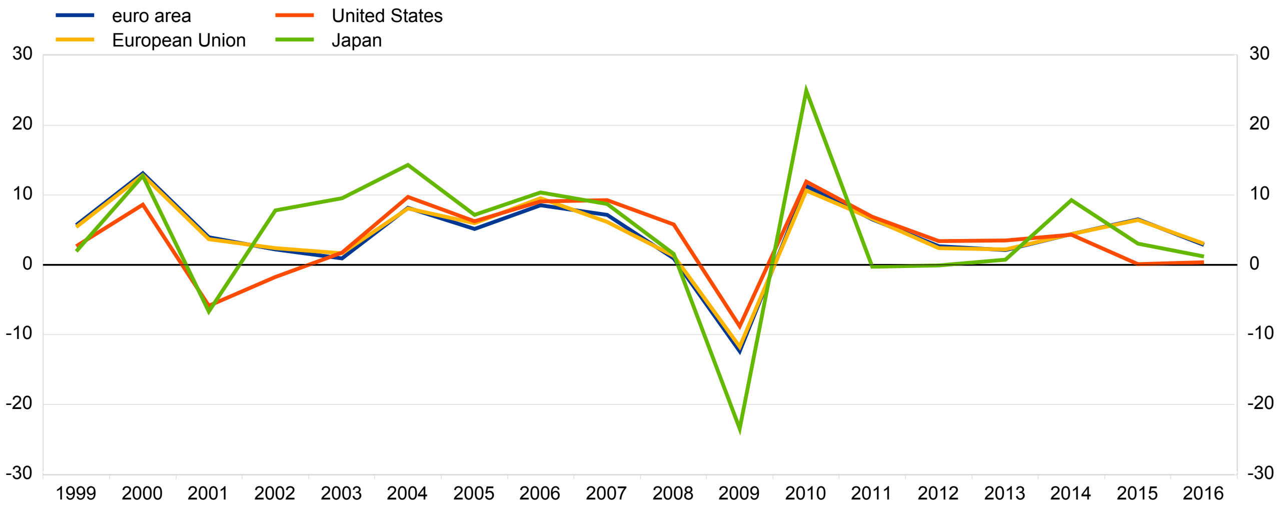
2 Economic activity

2.5 Exports of goods and services
(chain-linked volumes; annual percentage changes)

	1999-2016 1),2)	1999-2008 1)	2009-2016 2)	2013	2014	2015	2016
Belgium	3.9	4.6	3.1	0.8	5.1	4.3	6.1
Germany	5.2	7.2	2.8	1.9	4.1	5.2	2.6
Estonia	5.8	7.0	4.3	2.3	3.1	-0.6	3.6
Ireland	8.3	7.6	9.2	3.1	14.4	34.4	.
Greece	3.9	7.5	-0.5	1.5	7.8	3.4	-2.0
Spain	3.8	4.5	2.9	4.3	4.2	4.9	4.4
France	3.1	3.8	2.3	1.9	3.3	6.1	1.2
Italy	2.1	2.9	1.1	0.7	2.7	4.4	2.4
Cyprus	1.7	1.8	1.6	2.1	4.2	0.0	3.6
Latvia	6.3	8.4	3.8	1.1	3.9	2.6	2.6
Lithuania	7.8	9.6	5.7	9.6	3.5	-0.4	2.9
Luxembourg	5.6	7.0	4.3	6.3	12.1	12.8	.
Malta	5.0	6.2	3.8	1.4	5.3	4.1	4.0
Netherlands	4.3	5.3	3.0	2.1	4.5	5.0	3.7
Austria	4.1	6.2	1.5	0.5	2.3	3.6	1.7
Portugal	4.1	4.4	3.8	7.0	4.3	6.1	4.4
Slovenia	5.9	8.8	2.3	3.1	5.7	5.6	5.9
Slovakia	9.1	12.6	4.9	6.7	3.7	7.0	4.8
Finland	3.2	7.1	-1.5	1.1	-2.7	2.0	0.7
Euro area	4.3	5.5	2.8	2.1	4.4	6.5	2.9
Bulgaria	4.0	3.7	4.5	9.6	3.1	5.7	5.7
Czech Republic	8.4	11.4	4.7	0.2	8.7	7.7	4.3
Denmark	3.7	5.8	1.2	1.6	3.6	1.8	1.4
Croatia	4.7	6.5	2.4	3.1	7.6	10.0	6.7
Hungary	8.8	12.9	3.8	4.2	9.8	7.7	5.8
Poland	7.5	8.8	5.9	6.1	6.7	7.7	8.4
Romania	9.4	10.9	7.7	19.7	8.0	5.4	7.6
Sweden	4.0	5.7	2.0	-0.8	5.3	5.6	3.4
United Kingdom	3.1	4.4	1.6	1.1	1.5	6.1	1.4
European Union	4.4	5.6	2.8	2.2	4.4	6.4	3.0
United States	3.6	4.4	2.5	3.5	4.3	0.1	0.4
Japan	4.1	6.6	1.1	0.8	9.3	3.0	1.2

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Data for Malta available since 2000, data for Luxembourg available since 2001.
2) Where data are not available for 2016, the average indicated is for the periods 1999-2015 and 2009-2015.

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.

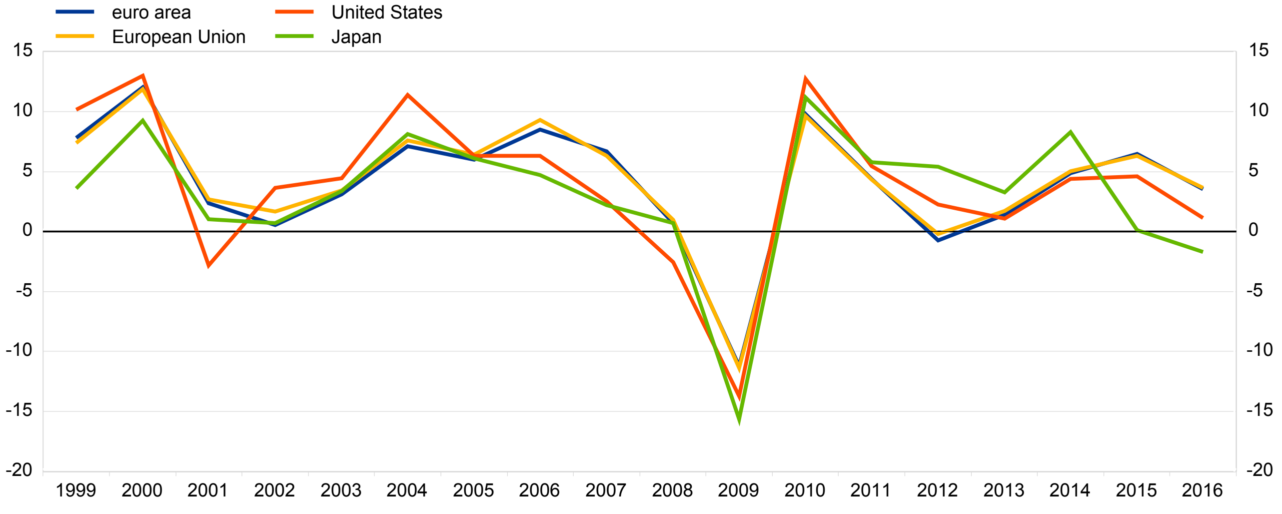
2 Economic activity

2.6 Imports of goods and services
(chain-linked volumes; annual percentage changes)

	1999-2016 1),2)	1999-2008 1)	2009-2016 2)	2013	2014	2015	2016
Belgium	3.8	4.4	3.0	0.3	5.9	4.3	5.3
Germany	4.5	5.6	3.1	3.1	4.0	5.5	3.7
Estonia	6.0	8.4	3.1	3.2	2.2	-1.4	4.9
Ireland	7.1	7.8	6.2	1.1	15.3	21.7	.
Greece	1.6	7.2	-5.0	-2.4	7.6	0.3	-0.4
Spain	3.1	6.3	-0.8	-0.5	6.5	5.6	3.3
France	4.1	5.2	2.8	2.1	4.7	6.6	3.7
Italy	2.0	3.5	0.0	-2.4	3.2	6.8	2.9
Cyprus	2.0	4.6	-1.2	-4.8	4.6	2.1	5.3
Latvia	5.1	8.8	0.7	-0.2	0.5	2.1	4.4
Lithuania	7.4	11.0	3.1	9.3	3.3	6.2	2.6
Luxembourg	6.1	7.3	4.8	5.3	13.1	14.0	.
Malta	4.2	5.6	2.9	0.4	1.6	7.5	1.1
Netherlands	4.1	5.3	2.7	1.0	4.2	5.8	3.9
Austria	3.5	4.9	1.7	0.7	1.3	3.4	2.8
Portugal	2.7	4.0	1.1	4.7	7.8	8.2	4.4
Slovenia	4.8	8.4	0.4	2.1	4.2	4.6	6.2
Slovakia	7.1	10.2	3.2	5.6	4.4	8.1	2.9
Finland	3.8	7.0	-0.1	0.5	-1.3	3.1	2.0
Euro area	4.0	5.4	2.1	1.4	4.9	6.5	3.5
Bulgaria	6.9	12.0	0.9	4.3	5.2	5.4	2.8
Czech Republic	7.8	10.9	4.1	0.1	10.1	8.2	3.2
Denmark	4.0	6.6	0.8	1.5	3.6	1.3	2.4
Croatia	3.9	7.3	-0.3	3.1	4.5	9.4	7.3
Hungary	7.7	12.0	2.6	4.5	10.9	6.1	5.7
Poland	6.2	7.9	4.0	1.7	10.0	6.6	8.7
Romania	10.5	16.0	4.0	8.8	8.7	9.2	9.3
Sweden	3.9	5.0	2.4	-0.1	6.3	5.5	3.7
United Kingdom	3.6	4.9	2.0	3.4	2.5	5.5	2.5
European Union	4.1	5.7	2.2	1.7	5.0	6.3	3.6
United States	3.7	5.1	2.0	1.1	4.4	4.6	1.1
Japan	3.0	3.9	1.8	3.3	8.3	0.1	-1.7

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Data for Malta available since 2000, data for Luxembourg available since 2001.
2) Where data are not available for 2016, the average indicated is for the periods 1999-2015 and 2009-2015.

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)

	1999-2016 [1)]	1999-2008	2009-2016 [1)]	2013	2014	2015	2016
Belgium	337.1	296.2	388.2	391.7	400.8	410.4	422.0
Germany	2,513.8	2,283.0	2,802.2	2,826.2	2,923.9	3,032.8	3,132.7
Estonia	13.6	10.2	17.9	18.9	19.8	20.3	20.9
Ireland	165.6	150.1	187.8	180.2	193.2	255.8	.
Greece	190.8	186.3	196.5	180.7	177.9	175.7	175.9
Spain	945.1	849.0	1,065.3	1,025.6	1,037.0	1,075.6	1,113.9
France	1,871.8	1,694.7	2,093.2	2,115.3	2,140.0	2,181.1	2,225.3
Italy	1,508.2	1,417.5	1,621.6	1,604.6	1,621.8	1,645.4	1,672.4
Cyprus	16.0	13.9	18.5	18.1	17.6	17.6	17.9
Latvia	17.2	13.5	21.8	22.8	23.6	24.4	25.0
Lithuania	25.6	19.3	33.4	35.0	36.6	37.3	38.6
Luxembourg	34.9	28.3	44.3	46.4	49.3	51.2	.
Malta	6.2	5.0	7.7	7.6	8.4	9.3	9.9
Netherlands	581.6	524.2	653.3	652.7	663.0	676.5	696.9
Austria	276.6	242.9	318.6	322.5	330.4	339.9	349.5
Portugal	161.8	150.4	176.0	170.3	173.1	179.5	185.0
Slovenia	32.0	27.9	37.1	35.9	37.3	38.6	39.8
Slovakia	52.7	36.4	73.1	74.2	75.9	78.7	81.0
Finland	176.7	158.3	199.7	203.3	205.5	209.5	214.4
Euro area	8,933.4	8,107.3	9,966.1	9,932.1	10,135.2	10,459.6	10,733.2
Bulgaria	30.9	22.0	42.0	42.0	42.8	45.3	47.4
Czech Republic	127.3	100.5	160.8	157.7	156.7	167.0	174.5
Denmark	226.6	202.8	256.2	258.7	265.2	271.8	277.3
Croatia	38.2	33.3	44.3	43.5	43.0	43.8	45.6
Hungary	88.9	77.9	102.6	101.5	105.0	109.7	112.4
Poland	304.2	236.7	388.6	394.7	411.0	429.8	424.6
Romania	103.7	73.0	142.2	144.3	150.4	160.0	169.1
Sweden	351.5	304.2	410.6	435.8	432.7	447.0	462.4
United Kingdom	1,988.9	1,906.3	2,092.1	2,048.3	2,260.8	2,580.1	2,367.6
European Union	12,193.9	11,064.0	13,606.3	13,558.6	14,002.6	14,714.0	14,819.6
United States	11,660.1	10,584.4	13,004.6	12,567.8	13,092.3	16,256.4	16,772.6
Japan	4,111.2	4,072.2	4,160.0	3,880.7	3,661.3	3,949.4	4,470.1

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Where data are not available for 2016, the average indicated is for the periods 1999-2015 and 2009-2015.

2 Economic activity

2.8 GDP per capita

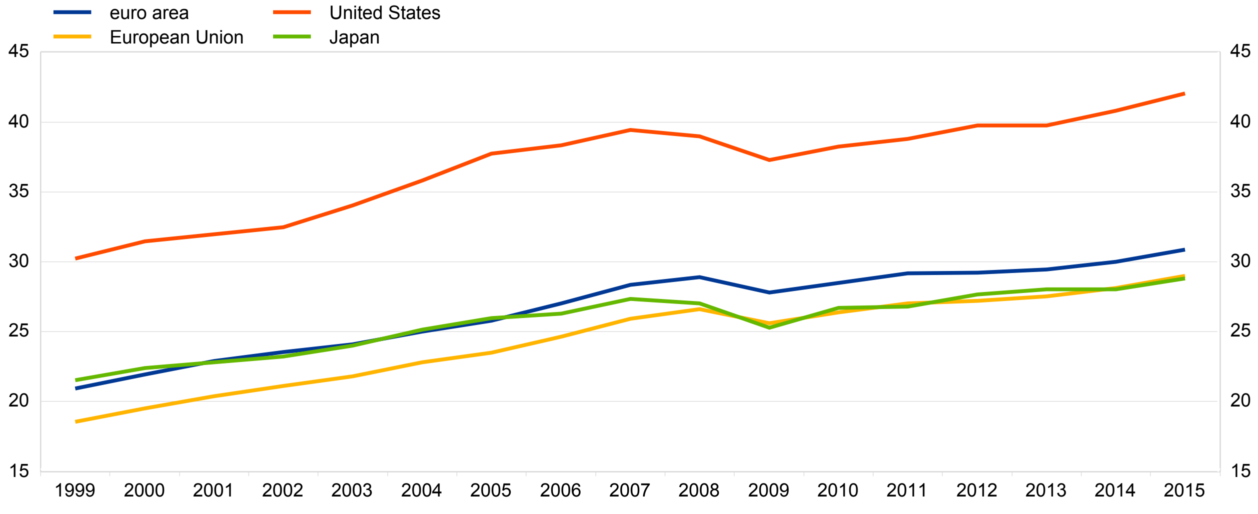
(current prices; PPPs [1] in EUR thousands)

	1999-2015 [2]	1999-2008 [2]	2009-2015	2012	2013	2014	2015
Belgium	28.9	26.5	32.4	33.0	33.1	33.7	34.4
Germany	29.1	26.4	33.2	33.7	34.2	35.3	36.0
Estonia	14.9	11.9	19.3	20.1	20.7	21.4	21.7
Ireland	33.6	30.8	37.6	36.0	36.5	38.5	51.4
Greece	20.5	20.4	21.3	19.6	19.7	19.8	19.7
Spain	23.1	21.8	25.5	24.8	24.6	25.2	26.0
France	26.5	24.7	29.2	29.2	29.9	30.1	30.8
Italy	25.9	24.9	27.6	27.7	27.1	27.2	27.9
Cyprus	23.0	21.9	25.2	24.7	23.1	22.8	23.6
Latvia	12.9	10.9	16.1	16.6	17.2	17.9	18.7
Lithuania	13.6	10.4	18.4	19.1	20.2	21.1	21.7
Luxembourg	62.8	56.5	70.7	70.5	71.7	75.0	76.5
Malta	20.0	17.8	23.1	22.8	23.6	25.4	26.9
Netherlands	32.4	30.1	36.3	36.2	36.8	36.7	37.2
Austria	30.7	27.9	34.8	35.8	36.1	36.4	37.1
Portugal	19.3	18.1	21.3	20.5	21.1	21.6	22.3
Slovenia	20.8	19.7	22.8	22.3	22.3	23.2	24.0
Slovakia	14.2	10.2	20.3	20.6	21.1	21.8	22.4
Finland	27.9	25.8	31.3	31.4	31.2	31.1	31.7
Euro area	26.3	24.4	29.2	29.2	29.5	30.0	30.9
Bulgaria	9.5	7.6	12.3	12.5	12.6	13.0	13.6
Czech Republic	19.3	17.0	22.9	22.5	23.0	24.3	25.3
Denmark	30.3	27.4	34.6	34.7	35.3	35.8	36.8
Croatia	14.2	12.7	16.3	16.4	16.4	16.5	16.8
Hungary	14.9	12.9	17.9	17.8	18.4	19.1	19.8
Poland	13.7	11.0	17.5	18.2	18.4	19.0	19.9
Romania	10.3	7.6	14.4	14.7	15.0	15.6	16.5
Sweden	30.2	27.8	34.0	34.6	34.5	34.8	35.9
United Kingdom	26.8	25.3	29.2	29.0	29.5	30.5	31.3
European Union	24.1	22.1	27.2	27.2	27.5	28.1	29.0
United States	36.4	34.5	39.5	39.8	39.8	40.8	42.0
Japan	25.5	24.3	27.3	27.7	28.0	28.0	28.8

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).

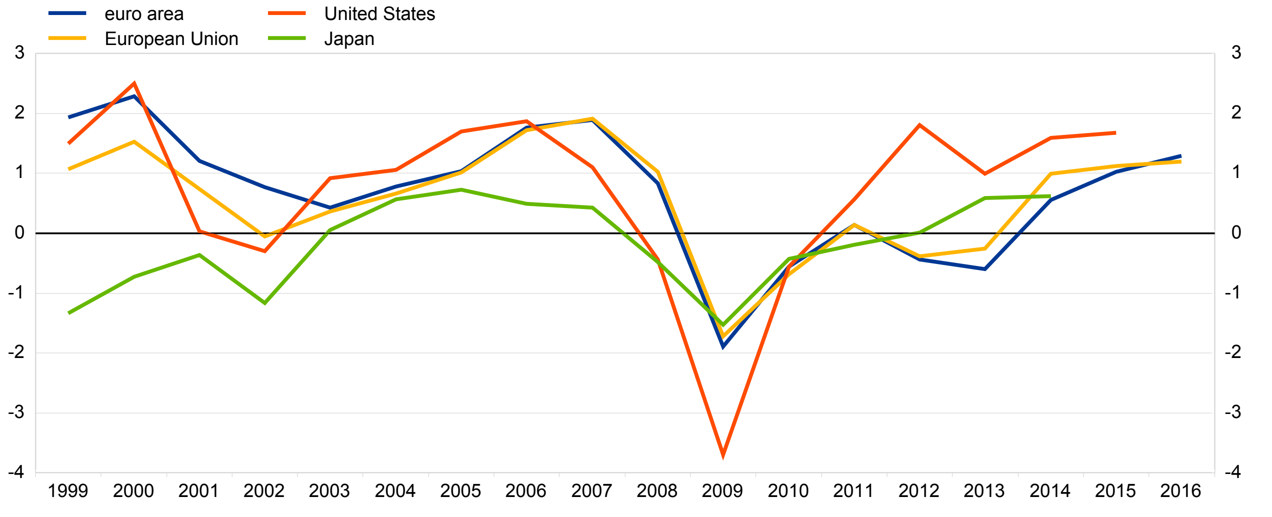
2 Economic activity

2.9 Employment
(persons employed; annual percentage changes)

	1999-2016 1),2)	1999-2008 1)	2009-2016 2)	2013	2014	2015	2016
Belgium	0.9	1.1	0.6	-0.3	0.4	0.9	1.3
Germany	0.7	0.6	0.8	0.6	0.8	0.9	1.0
Estonia	0.2	0.6	-0.3	1.2	0.8	2.9	0.3
Ireland	1.6	3.4	-0.5	2.5	1.7	2.5	2.7
Greece	-0.4	1.2	-2.7	-2.6	0.0	0.5	.
Spain	1.2	3.4	-1.5	-2.6	0.9	2.5	2.7
France	0.7	1.1	0.2	0.3	0.5	0.5	0.7
Italy	0.6	1.3	-0.3	-1.8	0.1	0.7	1.3
Cyprus	1.2	2.9	-0.8	-5.9	-1.8	1.9	2.7
Latvia	-0.5	0.8	-2.1	2.3	-1.3	1.3	-0.1
Lithuania	-0.5	-0.5	-0.6	1.3	2.0	1.3	2.0
Luxembourg	3.2	3.9	2.2	1.8	2.6	2.6	.
Malta	1.8	0.9	2.9	3.7	5.1	3.8	3.7
Netherlands	0.7	1.3	0.0	-1.2	-0.2	0.9	1.2
Austria	1.0	1.1	0.8	0.3	0.9	0.6	1.3
Portugal	-0.2	0.4	-1.1	-2.9	1.4	1.4	1.6
Slovenia	0.4	1.2	-0.5	-1.1	0.4	1.1	2.0
Slovakia	0.5	0.6	0.4	-0.8	1.4	2.0	2.4
Finland	0.8	1.6	-0.2	-0.7	-0.5	-0.3	0.6
Euro area	0.7	1.3	-0.1	-0.6	0.6	1.0	1.3
Bulgaria	0.0	1.0	-1.2	-0.4	0.4	0.4	0.5
Czech Republic	0.3	0.4	0.2	0.3	0.6	1.4	1.8
Denmark	0.3	0.8	-0.3	0.0	1.0	1.3	1.7
Croatia	0.9	3.0	-1.5	-2.6	2.7	1.5	0.6
Hungary	0.4	0.1	0.8	1.1	4.8	2.3	2.2
Poland	0.6	1.0	0.3	-0.1	1.7	1.5	0.6
Romania	-1.5	-1.6	-1.3	-0.9	0.8	-0.9	.
Sweden	1.0	1.1	0.9	1.0	1.4	1.5	1.7
United Kingdom	0.9	1.0	0.9	1.2	2.4	1.8	1.4
European Union	0.6	1.0	0.0	-0.3	1.0	1.1	1.2
United States	0.7	1.0	0.3	1.0	1.6	1.7	.
Japan	-0.2	-0.2	-0.2	0.6	0.6	.	.

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 2016, the average indicated is for the periods 1999-2015 and 2009-2015. However, for Japan the average refers to the periods 1999-2014 and 2009-2014.

Chart 2.9 Employment
(persons employed; annual percentage changes)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

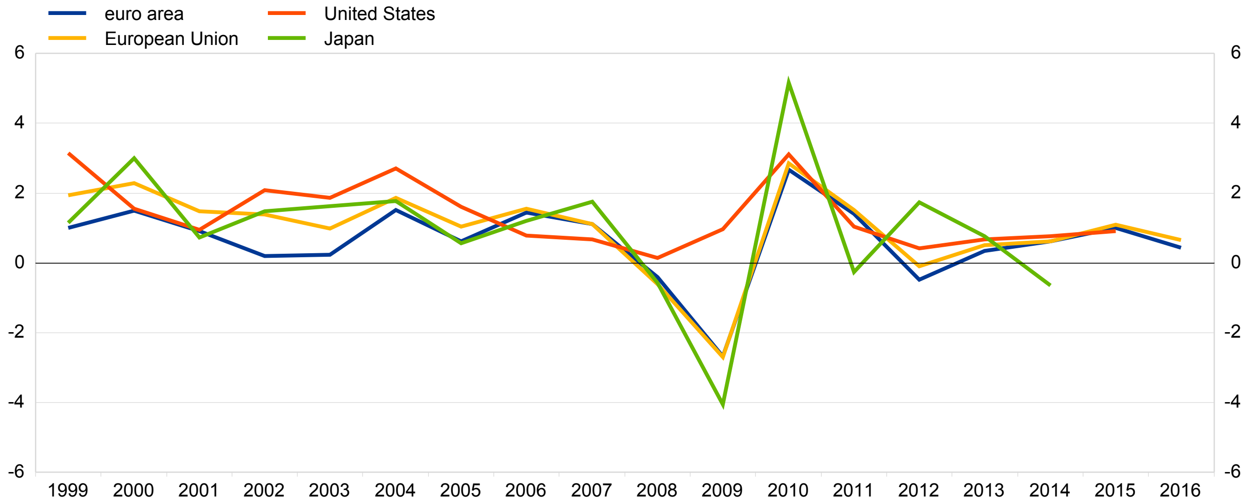
2 Economic activity

2.10 Labour productivity
(per persons employed; annual percentage changes)

	1999-2016 1),2)	1999-2008 1)	2009-2016 2)	2013	2014	2015	2016
Belgium	0.7	1.1	0.3	0.3	1.2	0.6	-0.1
Germany	0.6	1.0	0.2	-0.1	0.8	0.8	0.9
Estonia	3.2	5.1	1.0	0.2	2.0	-1.3	1.3
Ireland	3.2	1.8	5.2	-1.4	6.7	23.2	.
Greece	0.5	2.2	-1.6	-0.6	0.3	-0.7	-1.3
Spain	0.6	0.1	1.3	0.9	0.5	0.7	0.5
France	0.7	1.0	0.4	0.3	0.2	0.8	0.5
Italy	-0.2	0.0	-0.5	0.1	0.0	0.1	-0.4
Cyprus	0.7	1.2	-0.1	0.0	0.2	-0.2	0.1
Latvia	4.2	5.8	2.2	0.3	3.5	1.4	2.0
Lithuania	4.3	6.6	1.4	2.1	1.5	0.5	0.3
Luxembourg	-0.1	-0.2	-0.1	2.3	2.0	0.9	.
Malta	1.0	1.2	0.8	0.8	3.0	3.5	1.3
Netherlands	0.8	1.2	0.5	1.0	1.7	1.0	0.9
Austria	0.6	1.3	-0.2	-0.2	-0.3	0.3	0.1
Portugal	0.9	1.2	0.6	1.8	-0.5	0.2	-0.2
Slovenia	1.8	3.1	0.2	0.0	2.7	1.2	0.5
Slovakia	3.1	4.5	1.5	2.3	1.1	1.8	0.9
Finland	0.8	1.7	-0.3	0.0	-0.2	0.6	1.0
Euro area	0.6	0.8	0.4	0.3	0.6	1.0	0.4
Bulgaria	3.1	3.7	2.3	1.3	1.0	3.3	2.9
Czech Republic	2.4	3.6	0.8	-0.8	2.2	3.1	0.6
Denmark	0.8	0.9	0.8	1.0	0.7	0.4	-0.6
Croatia	0.7	1.2	0.2	1.6	-3.1	0.1	2.3
Hungary	1.7	3.3	-0.2	1.0	-0.7	0.9	-0.2
Poland	2.7	2.6	2.8	1.5	1.5	2.4	2.2
Romania	4.9	7.1	1.9	4.4	2.3	4.9	.
Sweden	1.5	1.9	0.9	0.3	1.1	2.5	1.6
United Kingdom	1.0	1.5	0.3	0.7	0.7	0.4	0.4
European Union	1.0	1.3	0.6	0.5	0.6	1.1	0.7
United States	1.4	1.5	1.2	0.7	0.8	0.9	.
Japan	0.9	1.3	0.4	0.8	-0.6	.	.

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Data for Luxembourg and Malta available since 2000; and for Poland since 2002.
2) Where data are not available for 2016, the average indicated is for the periods 1999-2015 and 2009-2015. However, for Japan the average refers to the periods 1999-2014 and 2009-2014.

Chart 2.10 Labour productivity
(per persons employed; annual percentage changes)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

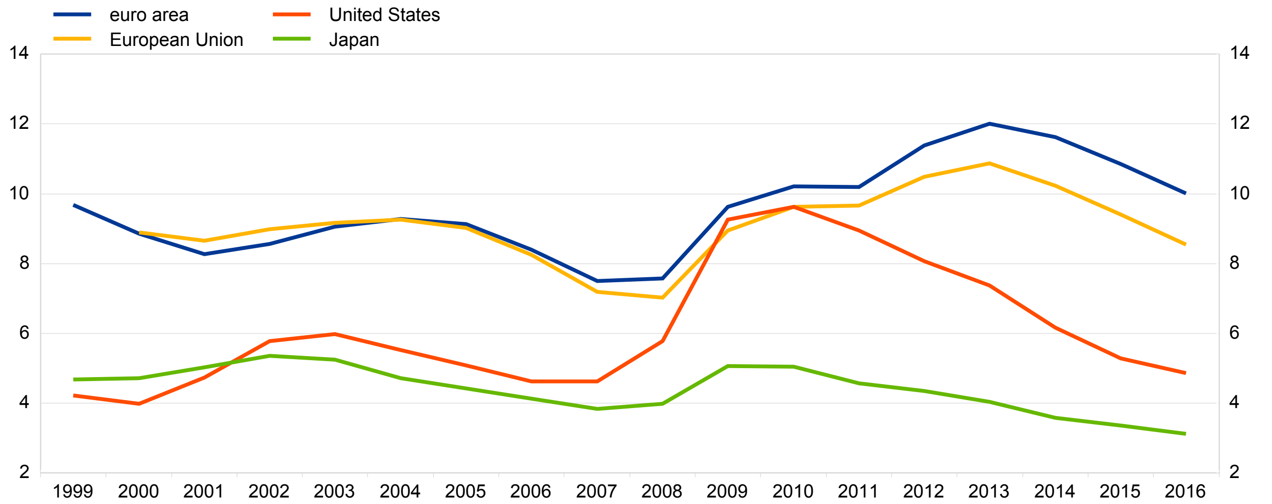
2 Economic activity

2.11 Unemployment
(percentage of the labour force)

	1999-2016 1)	1999-2008 1)	2009-2016	2013	2014	2015	2016
Belgium	7.9	7.7	8.1	8.4	8.5	8.5	8.0
Germany	7.7	9.1	5.8	5.2	5.0	4.6	4.1
Estonia	9.9	9.3	10.7	8.6	7.4	6.2	6.8
Ireland	8.0	4.7	12.7	13.1	11.3	9.4	7.9
Greece	14.3	10.0	20.5	27.5	26.5	24.9	23.5
Spain	15.5	10.7	22.4	26.1	24.5	22.1	19.6
France	9.2	8.9	9.8	10.3	10.3	10.4	10.0
Italy	9.1	8.2	10.3	12.1	12.7	11.9	11.7
Cyprus	7.3	4.3	11.2	15.9	16.1	14.9	13.3
Latvia	12.3	10.9	14.4	11.9	10.8	9.9	9.6
Lithuania	11.9	11.0	13.2	11.8	10.7	9.1	7.9
Luxembourg	4.4	3.6	5.4	5.9	6.0	6.5	6.3
Malta	6.7	7.0	6.3	6.4	5.8	5.4	4.8
Netherlands	5.0	4.4	6.0	7.3	7.4	6.9	6.0
Austria	4.9	4.7	5.2	5.4	5.6	5.7	6.0
Portugal	9.8	7.3	13.5	16.4	14.1	12.6	11.2
Slovenia	7.1	6.1	8.4	10.1	9.7	9.0	7.9
Slovakia	14.9	16.0	13.3	14.2	13.2	11.5	9.7
Finland	8.4	8.5	8.3	8.2	8.7	9.4	8.8
Euro area	9.5	8.6	10.8	12.0	11.6	10.9	10.0
Bulgaria	11.6	12.4	10.6	13.0	11.4	9.2	7.7
Czech Republic	7.0	7.3	6.5	7.0	6.1	5.1	4.0
Denmark	5.5	4.5	6.9	7.0	6.5	6.2	6.2
Croatia	13.7	13.1	14.5	17.3	17.3	16.3	12.8
Hungary	7.9	6.6	9.7	10.1	7.7	6.8	5.1
Poland	12.9	15.5	9.2	10.4	9.0	7.5	6.2
Romania	7.1	7.2	6.9	7.1	6.8	6.8	5.9
Sweden	7.1	6.5	8.0	8.0	7.9	7.4	6.9
United Kingdom	6.0	5.2	7.2	7.6	6.1	5.3	4.8
European Union	9.1	8.5	9.9	10.9	10.2	9.4	8.5
United States	6.2	5.0	7.8	7.4	6.2	5.3	4.9
Japan	4.5	4.6	4.3	4.0	3.6	3.4	3.1

Source: Eurostat.
1) Data for Estonia, Cyprus, Malta, Bulgaria, Croatia and the European Union available since 2000.

Chart 2.11 Unemployment
(percentage of the labour force)



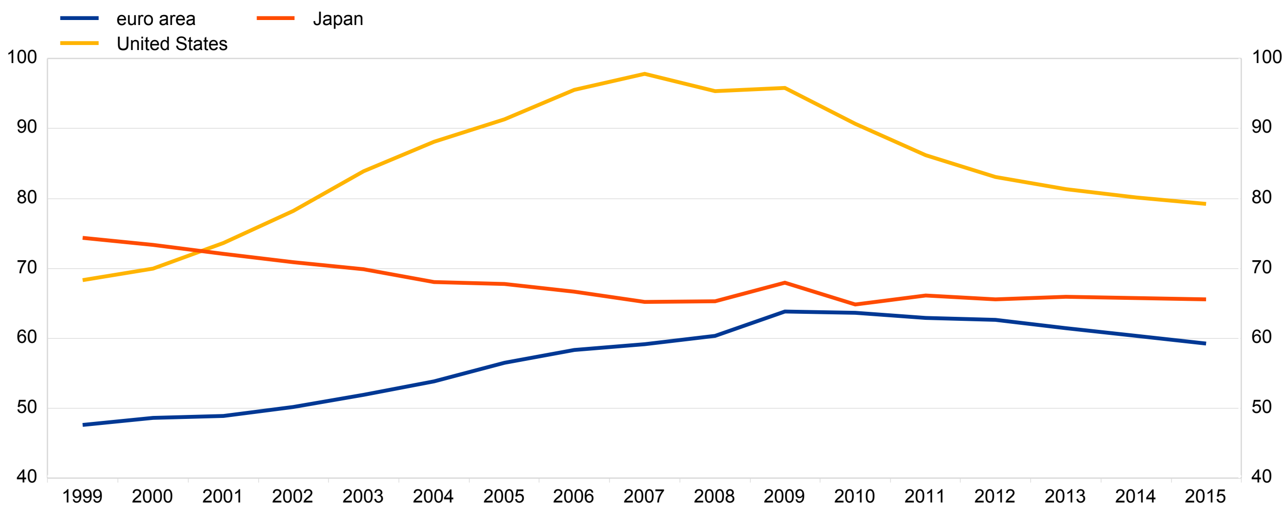
Source: Eurostat.

2.12 Household debt [1)]
(percentages of GDP)

	1999-2015 [2)]	1999-2008 [2)]	2009-2015	2012	2013	2014	2015
Belgium	46.9	41.5	54.6	54.7	55.8	57.7	58.7
Germany	62.9	67.3	56.7	56.3	55.4	54.3	53.5
Estonia	33.7	25.4	45.5	41.9	40.2	39.7	40.7
Ireland	85.1	76.5	94.8	98.8	93.5	82.3	58.5
Greece	42.1	28.3	61.7	64.6	65.1	63.4	62.4
Spain	68.3	61.4	78.2	80.6	77.1	72.7	67.8
France	45.8	39.4	54.9	55.2	55.7	56.0	56.6
Italy	35.2	29.7	43.2	44.0	43.5	42.7	42.2
Cyprus	99.5	82.4	123.7	126.5	127.5	131.0	129.2
Latvia	35.6	34.5	36.4	33.2	29.8	26.4	24.5
Lithuania	17.0	11.2	25.4	23.7	22.4	21.5	22.2
Luxembourg	49.4	43.1	55.8	56.2	56.1	56.8	58.5
Malta	54.4	48.3	58.8	60.3	59.1	57.6	55.5
Netherlands	106.7	100.1	116.3	118.4	114.7	113.1	112.0
Austria	50.3	48.6	52.8	52.4	51.6	51.6	51.8
Portugal	78.8	72.9	87.1	90.7	86.3	82.3	77.5
Slovenia	23.9	19.1	29.4	30.9	30.0	28.5	27.8
Slovakia	17.6	10.0	28.4	27.7	29.6	32.2	34.7
Finland	50.2	41.2	63.1	63.6	64.0	65.5	66.8
Euro area	57.0	53.5	62.0	62.7	61.5	60.4	59.3
Bulgaria	17.2	11.9	24.0	23.2	23.1	23.1	21.7
Czech Republic	20.9	14.4	30.2	30.9	31.7	30.5	30.7
Denmark	117.9	105.9	135.0	135.7	132.8	131.4	128.3
Croatia	34.4	29.0	40.7	41.2	40.5	40.4	39.1
Hungary	23.8	18.3	31.7	31.7	28.1	25.6	21.5
Poland	27.3	18.8	34.6	34.1	35.1	35.6	36.1
Romania	13.0	7.9	20.2	20.6	19.2	18.1	17.5
Sweden	66.3	56.6	80.3	80.5	82.3	83.3	83.9
United Kingdom	84.1	79.9	90.2	90.0	87.6	85.8	86.0
European Union	-	-	-	-	-	-	-
United States	84.6	84.2	85.2	83.1	81.3	80.2	79.2
Japan	68.0	69.4	66.0	65.6	66.0	65.8	65.6

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 Greece and Lithuania since 1999; for Bulgaria available since 2000; for Ireland, Croatia and Slovenia since 2001; for Luxembourg since 2002; for Poland since 2003; and for Latvia and Malta since 2004.

Chart 2.12 Household debt
(percentages of GDP)



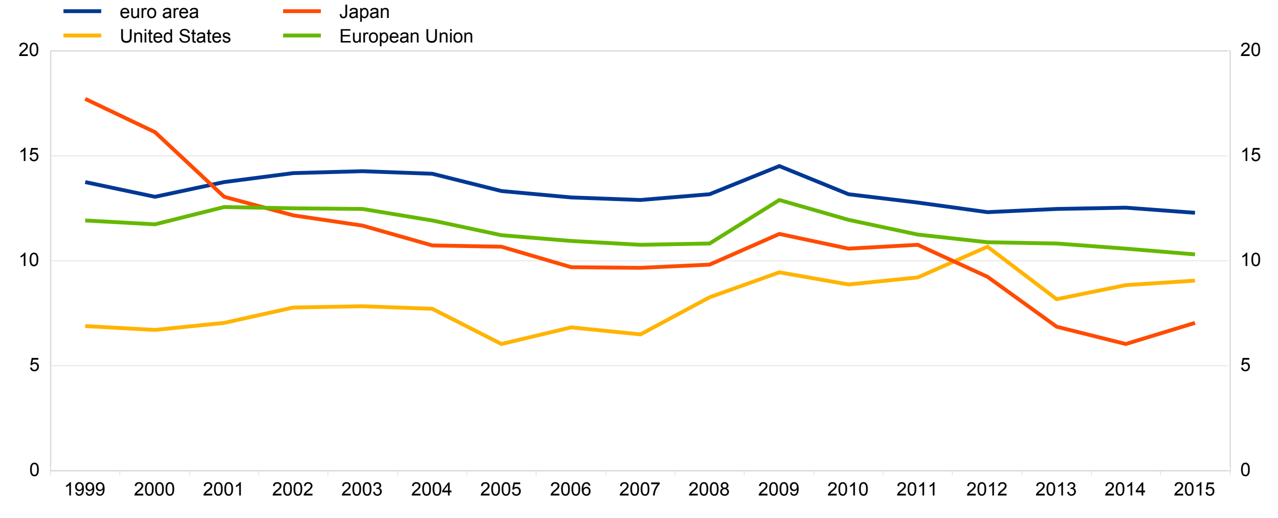
Sources: ECB, Eurostat, US Bureau of Economic Analysis, Federal Reserve Board and Bank of Japan.

2.13 Household savings ratio
(percentages of adjusted disposable income [1])

	1999-2015 [2]	1999-2008 [2]	2009-2015	2012	2013	2014	2015
Belgium	15.0	16.0	13.6	12.9	12.3	12.1	11.7
Germany	16.3	16.1	16.6	16.4	16.3	16.7	17.0
Estonia	4.7	1.3	9.4	8.9	6.2	9.4	8.8
Ireland	8.8	7.0	11.4	11.8	10.3	10.9	10.7
Greece	3.6	6.7	-0.9	-0.2	-4.1	-5.6	-5.8
Spain	9.7	9.5	9.9	8.6	9.6	9.0	8.2
France	14.8	14.9	14.8	14.7	14.0	14.1	14.1
Italy	12.9	14.3	11.1	9.5	11.0	11.1	10.4
Cyprus	4.7	7.2	1.2	3.6	-3.3	-7.9	-5.7
Latvia	0.9	1.6	-0.1	-3.8	-4.5	-3.5	-2.2
Lithuania	2.6	2.5	2.7	1.8	2.1	-0.6	-1.9
Luxembourg	-	-	-	-	-	-	-
Malta	-	-	-	-	-	-	-
Netherlands	12.9	12.4	13.5	14.1	14.1	13.1	12.7
Austria	14.8	15.6	13.8	14.0	12.6	12.6	13.0
Portugal	8.6	9.5	7.5	7.7	7.8	5.2	4.4
Slovenia	14.2	16.0	13.2	10.8	13.4	13.3	14.8
Slovakia	7.5	7.9	7.1	6.2	5.9	7.2	8.8
Finland	8.5	8.5	8.4	7.8	8.6	7.2	6.8
Euro area	13.3	13.6	12.9	12.3	12.5	12.5	12.3
Bulgaria	-8.1	-9.8	-5.3	-8.5	-1.5	-14.3	.
Czech Republic	11.5	11.3	11.8	11.1	10.9	11.8	11.8
Denmark	6.5	5.6	7.9	7.0	8.8	5.2	10.5
Croatia	9.6	7.9	11.6	12.1	10.5	11.8	.
Hungary	9.5	9.5	9.5	8.2	9.8	10.9	9.6
Poland	6.3	8.8	2.9	1.5	2.5	1.9	2.1
Romania	-3.0	-6.5	2.0	-14.6	13.3	13.2	15.1
Sweden	12.7	9.8	16.7	17.9	17.7	18.3	18.7
United Kingdom	7.8	7.6	8.2	8.3	6.7	6.8	6.5
European Union	11.5	11.7	11.2	10.9	10.8	10.6	10.3
United States	8.0	7.2	9.2	10.7	8.2	8.8	9.0
Japan	10.8	12.1	8.8	9.2	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 Ireland and Poland available since 1999; 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.

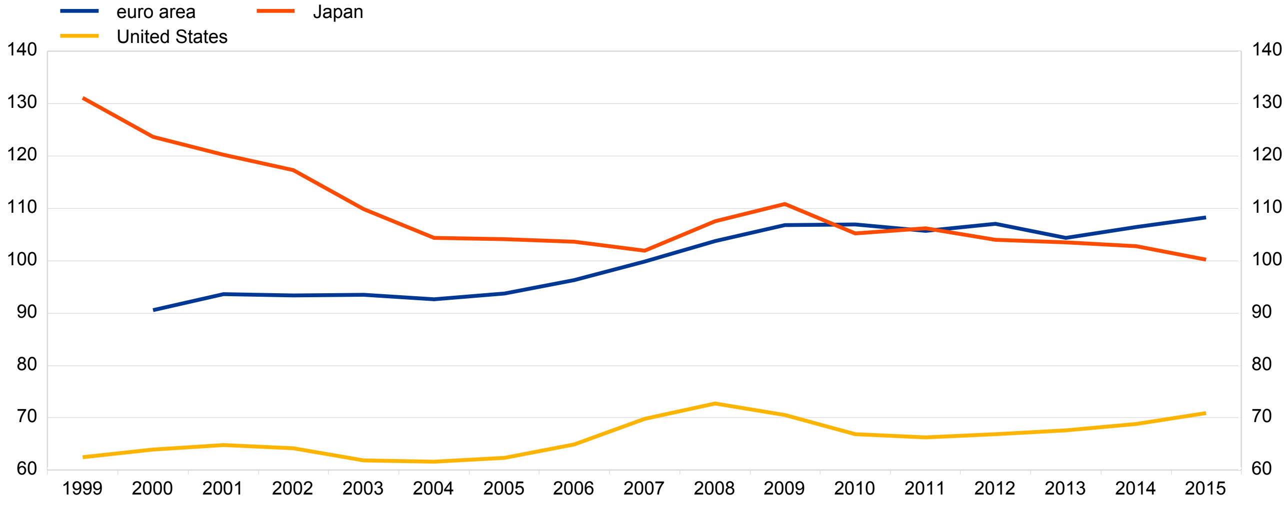
2 Economic activity

2.14 Non-financial corporations’ debt [1)]
(percentages of GDP)

	1999-2015 [2)]	1999-2008 [2)]	2009-2015	2012	2013	2014	2015
Belgium	127.7	114.2	147.1	147.9	149.1	150.6	154.9
Germany	64.5	65.8	62.7	61.9	63.5	61.0	60.7
Estonia	88.3	85.0	93.1	87.3	87.3	90.4	90.2
Ireland	147.0	97.8	203.3	207.7	197.3	223.9	265.1
Greece	54.9	47.5	65.5	66.9	64.1	65.1	63.9
Spain	106.1	94.4	122.9	126.1	120.2	112.8	105.5
France	108.5	101.1	119.0	120.6	118.8	125.9	126.6
Italy	77.6	70.5	87.7	89.7	87.6	86.8	83.9
Cyprus	200.9	193.9	211.0	203.9	215.5	225.1	226.1
Latvia	78.3	66.6	86.7	84.8	79.6	77.1	77.5
Lithuania	43.2	44.2	42.5	41.6	38.3	36.1	35.9
Luxembourg	307.3	259.5	355.0	359.3	339.5	345.3	367.4
Malta	139.0	121.9	151.2	156.7	150.0	145.1	138.9
Netherlands	121.4	119.0	125.0	125.2	124.1	125.0	124.3
Austria	93.2	90.9	96.6	96.7	99.1	95.8	96.0
Portugal	113.4	101.3	130.7	143.3	136.7	128.3	120.7
Slovenia	81.3	71.8	88.1	93.7	89.4	79.6	68.2
Slovakia	44.8	43.2	47.1	46.0	47.5	48.0	49.1
Finland	98.3	89.7	110.5	109.0	113.1	112.2	116.1
Euro area	100.2	95.2	106.5	107.0	104.4	106.4	108.3
Bulgaria	86.7	66.6	112.5	111.6	119.4	113.6	99.9
Czech Republic	45.4	44.7	46.5	46.0	52.5	50.1	46.3
Denmark	86.2	80.5	94.3	97.5	94.6	91.6	89.6
Croatia	81.4	64.3	100.9	102.4	103.5	101.5	101.2
Hungary	72.2	62.0	86.7	87.4	83.4	82.2	77.6
Poland	38.2	33.1	42.5	42.5	43.7	46.1	47.2
Romania	49.3	44.5	56.1	52.1	48.6	45.1	43.7
Sweden	134.3	122.4	151.3	149.8	150.4	150.9	151.4
United Kingdom	116.3	110.3	124.9	129.7	118.1	135.5	122.2
European Union	-	-	-	-	-	-	-
United States [(3)]	66.3	64.9	68.3	66.9	67.6	68.9	70.9
Japan [(4)]	109.2	112.4	104.7	104.0	103.6	102.8	100.2

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 Austria and Denmark available since 1999; for Bulgaria since 2000; for Ireland and Croatia since 2001; for Luxembourg since 2002; 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.
4) Figures for Japan do not include 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.

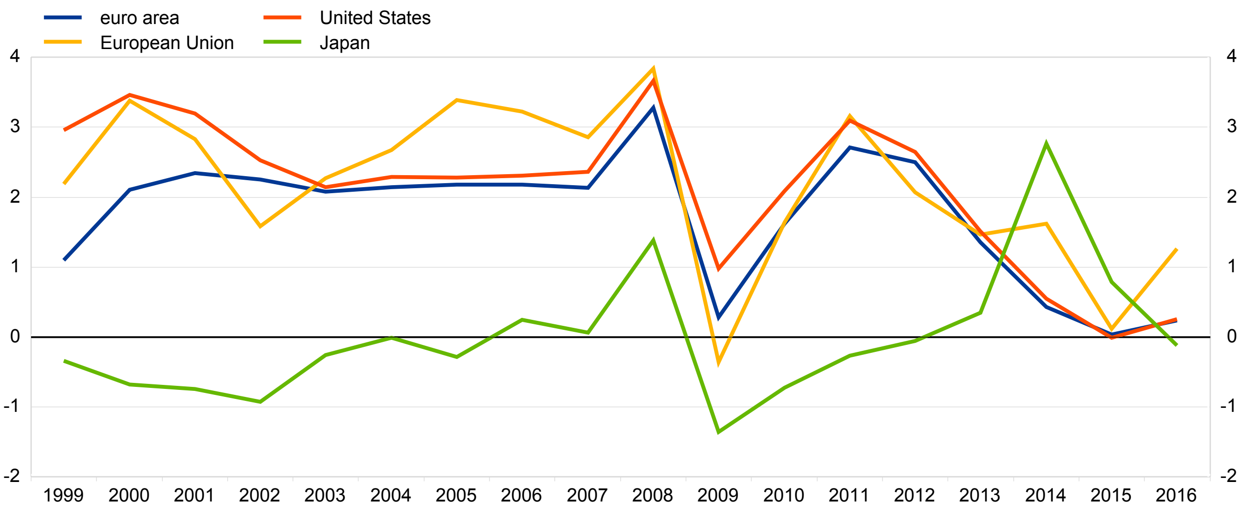
3 Prices and costs

3.1 HICP
(annual percentage changes)

	1999-2016	1999-2008	2009-2016	2013	2014	2015	2016
Belgium	1.9	2.2	1.5	1.2	0.5	0.6	1.8
Germany	1.4	1.7	1.1	1.6	0.8	0.1	0.4
Estonia	3.5	4.6	2.1	3.2	0.5	0.1	0.8
Ireland	1.9	3.4	0.0	0.5	0.3	0.0	-0.2
Greece	2.2	3.3	0.8	-0.9	-1.4	-1.1	0.0
Spain	2.2	3.2	0.9	1.5	-0.2	-0.6	-0.3
France	1.5	1.9	1.0	1.0	0.6	0.1	0.3
Italy	1.9	2.4	1.3	1.2	0.2	0.1	-0.1
Cyprus	1.9	2.7	0.8	0.4	-0.3	-1.5	-1.2
Latvia	3.6	5.6	1.2	0.0	0.7	0.2	0.1
Lithuania	2.3	2.7	1.7	1.2	0.2	-0.7	0.7
Luxembourg	2.2	2.8	1.5	1.7	0.7	0.1	0.0
Malta	2.2	2.6	1.7	1.0	0.8	1.2	0.9
Netherlands	1.9	2.4	1.3	2.6	0.3	0.2	0.1
Austria	1.8	1.9	1.7	2.1	1.5	0.8	1.0
Portugal	2.1	2.9	1.0	0.4	-0.2	0.5	0.6
Slovenia	3.5	5.4	1.1	1.9	0.4	-0.8	-0.2
Slovakia	3.9	6.2	1.2	1.5	-0.1	-0.3	-0.5
Finland	1.7	1.8	1.7	2.2	1.2	-0.2	0.4
Euro area	1.7	2.2	1.1	1.4	0.4	0.0	0.2
Bulgaria	4.1	6.7	0.9	0.4	-1.6	-1.1	-1.3
Czech Republic	2.1	2.7	1.3	1.4	0.4	0.3	0.6
Denmark	1.7	2.1	1.2	0.5	0.4	0.2	0.0
Croatia	2.5	3.4	1.3	2.3	0.2	-0.3	-0.6
Hungary	4.8	6.7	2.5	1.7	0.0	0.1	0.4
Poland	2.9	3.9	1.8	0.8	0.1	-0.7	-0.2
Romania	11.8	19.5	3.0	3.2	1.4	-0.4	-1.1
Sweden	1.4	1.7	1.1	0.4	0.2	0.7	1.1
United Kingdom	1.9	1.8	2.2	2.6	1.5	0.0	0.7
European Union	2.1	2.7	1.4	1.5	0.5	0.0	0.3
United States(1)	2.2	2.8	1.4	1.5	1.6	0.1	1.3
Japan(1)	0.0	-0.2	0.2	0.3	2.8	0.8	-0.1

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

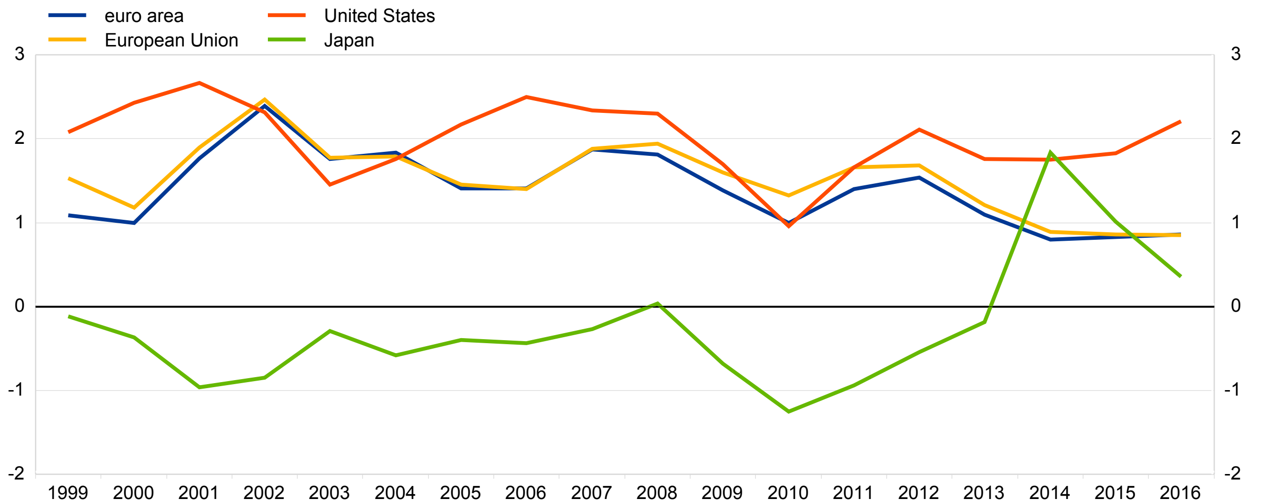
(annual percentage changes)

	1999-2016 1)	1999-2008 1)	2009-2016	2013	2014	2015	2016
Belgium	1.6	1.5	1.6	1.5	1.5	1.6	1.8
Germany	1.0	1.0	1.1	1.2	1.1	1.1	1.1
Estonia	2.8	3.8	1.5	1.9	1.3	1.2	1.2
Ireland	1.6	3.0	0.0	0.1	0.7	1.6	0.7
Greece	1.7	2.9	0.2	-2.4	-1.5	-0.4	0.6
Spain	1.8	2.7	0.8	1.3	-0.1	0.3	0.7
France	1.2	1.4	1.0	0.7	1.0	0.6	0.6
Italy	1.8	2.1	1.3	1.2	0.7	0.7	0.5
Cyprus	0.9	1.3	0.5	-0.3	0.1	-0.4	-0.8
Latvia	2.5	4.3	0.3	-0.1	1.7	1.5	1.2
Lithuania	1.4	1.7	1.1	1.4	0.7	1.9	1.7
Luxembourg	1.8	1.9	1.7	2.0	1.3	1.7	1.0
Malta	1.7	2.1	1.2	0.1	1.5	1.5	1.0
Netherlands	1.6	1.9	1.4	2.5	0.6	0.9	0.6
Austria	1.7	1.5	1.9	2.2	1.7	1.7	1.6
Portugal	1.8	2.7	0.7	0.1	0.2	0.6	0.9
Slovenia	2.9	4.9	0.5	0.9	0.6	0.3	0.7
Slovakia	3.4	5.1	1.3	1.4	0.5	0.5	0.9
Finland	1.6	1.5	1.6	1.8	1.6	0.8	1.1
Euro area	1.4	1.6	1.1	1.1	0.8	0.8	0.9
Bulgaria	3.8	6.5	0.5	0.0	-1.6	-0.6	-1.0
Czech Republic	1.3	1.9	0.6	0.3	0.5	0.7	1.2
Denmark	1.5	1.8	1.1	0.5	0.6	1.2	0.5
Croatia	1.4	3.2	0.8	0.9	0.5	0.8	0.2
Hungary	3.3	4.3	2.4	2.3	1.4	1.7	1.5
Poland	2.5	3.5	1.2	0.7	0.2	0.5	0.2
Romania	5.8	9.3	2.8	2.3	2.3	1.6	0.0
Sweden	1.1	1.1	1.0	0.3	0.4	0.9	1.2
United Kingdom	1.5	1.1	1.9	2.0	1.6	1.0	1.2
European Union	1.5	1.7	1.3	1.2	0.9	0.9	0.9
United States(2)	2.0	2.4	1.7	1.8	1.7	1.8	2.2
Japan(2)	-0.3	-0.2	-0.1	-0.2	1.8	1.0	0.4

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.

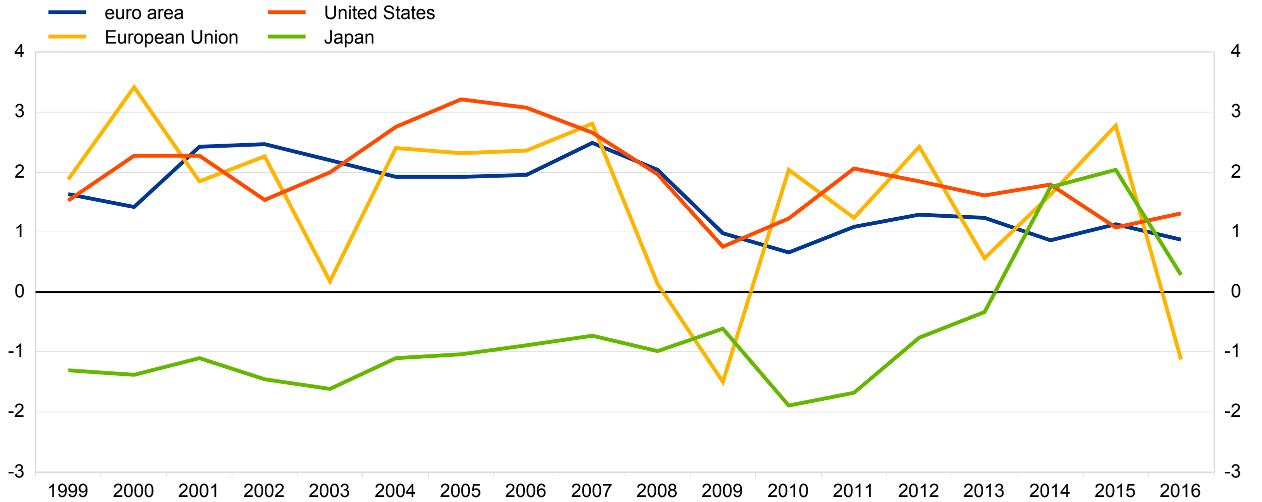
3 Prices and costs

3.3 GDP deflator
(annual percentage changes)

	1999-2016 1),2)	1999-2008 1)	2009-2016 2)	2013	2014	2015	2016
Belgium	1.7	1.9	1.4	1.2	0.7	0.9	1.6
Germany	1.1	0.8	1.6	2.0	1.8	2.0	1.4
Estonia	4.8	6.5	2.4	3.9	1.7	1.0	1.7
Ireland	2.1	3.4	0.3	1.4	-1.2	4.9	.
Greece	1.7	3.2	-0.2	-2.4	-1.8	-1.0	0.1
Spain	2.0	3.6	0.2	0.4	-0.3	0.5	0.3
France	1.4	1.8	0.7	0.8	0.5	0.6	0.8
Italy	1.9	2.4	1.1	1.2	1.0	0.7	0.8
Cyprus	2.1	3.4	0.3	-1.0	-1.5	-1.3	-1.3
Latvia	4.7	7.8	0.3	1.5	1.6	0.4	0.7
Lithuania	2.5	3.3	1.3	1.4	1.0	0.2	1.2
Luxembourg	2.8	3.3	2.4	1.3	1.5	0.4	.
Malta	2.5	2.5	2.5	2.0	2.0	2.4	1.6
Netherlands	1.7	2.5	0.6	1.4	0.1	0.1	0.8
Austria	1.7	1.6	1.7	1.6	1.8	1.9	1.3
Portugal	2.2	3.2	0.9	2.3	0.7	2.1	1.6
Slovenia	3.3	4.9	0.9	0.9	0.8	1.0	0.6
Slovakia	2.8	4.6	0.3	0.5	-0.2	-0.2	-0.4
Finland	1.7	1.5	2.0	2.6	1.7	1.7	0.8
Euro area	1.6	2.0	1.0	1.2	0.9	1.1	0.9
Bulgaria	4.3	6.0	2.1	-0.7	0.5	2.2	1.1
Czech Republic	1.8	2.3	1.1	1.4	2.5	1.0	1.1
Denmark	2.0	2.5	1.3	0.9	0.8	0.9	0.7
Croatia	2.8	4.1	1.1	0.8	0.0	0.1	-0.1
Hungary	4.9	6.4	2.8	2.9	3.4	1.7	1.0
Poland	-	-	1.9	0.3	0.5	0.6	0.2
Romania	15.1	23.6	3.9	3.4	1.7	2.4	1.9
Sweden	1.7	1.8	1.5	1.1	1.8	2.0	1.4
United Kingdom	1.9	2.2	1.5	1.9	1.6	0.6	1.7
European Union	1.7	2.0	1.3	0.6	1.6	2.8	-1.1
United States	2.0	2.3	1.5	1.6	1.8	1.1	1.3
Japan	-0.8	-1.2	-0.2	-0.3	1.7	2.0	0.3

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Data for Luxembourg, Malta and Croatia available since 2000; and for Poland since 2003.
2) Where data are not available for 2016, the average indicated is for the periods 1999-2015 and 2009-2015.

Chart 3.3 GDP deflator
(annual percentage changes)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

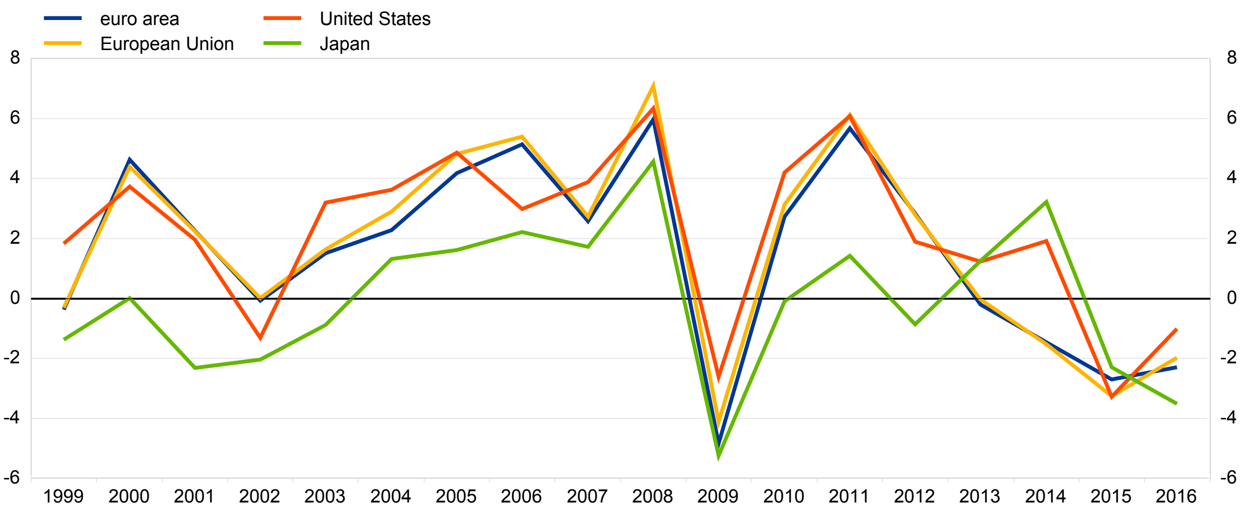
3 Prices and costs

3.4 Industrial producer prices
(annual percentage changes)

	1999-2016 1)	1999-2008 1)	2009-2016	2013	2014	2015	2016
Belgium	1.8	3.4	-0.1	0.6	-4.6	-4.2	-1.8
Germany	1.3	2.4	0.0	0.0	-0.9	-1.8	-1.7
Estonia	2.8	4.7	1.4	9.9	-2.3	-2.8	-2.1
Ireland	1.2	4.0	0.1	1.5	-0.3	-4.4	-2.8
Greece	2.5	4.7	-0.1	-0.7	-0.8	-5.8	-5.4
Spain	2.1	3.3	0.6	0.6	-1.3	-2.1	-3.1
France	1.3	2.4	0.0	0.3	-1.3	-2.2	-2.3
Italy	1.6	3.0	-0.3	-1.2	-1.8	-3.4	-2.2
Cyprus	2.4	4.8	0.1	-2.1	-3.1	-5.7	-3.8
Latvia	4.4	8.4	1.0	1.1	0.1	-1.4	-3.3
Lithuania	2.3	4.8	-0.8	-0.3	-5.1	-9.1	-3.3
Luxembourg	2.4	5.5	-1.3	1.3	-4.8	-0.5	-6.0
Malta	3.9	5.2	2.6	0.9	-1.1	-3.2	-0.3
Netherlands	1.9	4.7	-1.4	-1.3	-3.2	-7.3	-5.2
Austria	1.1	1.8	0.1	-1.0	-1.5	-2.1	-2.5
Portugal	2.2	3.8	0.2	-0.4	-1.5	-4.2	-1.7
Slovenia	2.8	4.7	0.5	0.3	-1.1	-0.5	-1.4
Slovakia	2.1	5.1	-1.5	-0.2	-3.6	-4.3	-4.4
Finland	1.6	2.6	0.5	0.9	-0.9	-2.2	-1.7
Euro area	1.5	2.8	-0.1	-0.2	-1.5	-2.7	-2.3
Bulgaria	4.5	7.2	1.2	-1.3	-0.9	-1.7	-2.8
Czech Republic	1.4	2.6	-0.1	0.8	-0.8	-3.2	-3.2
Denmark	3.0	5.3	0.1	2.2	-2.3	-6.5	-1.5
Croatia	2.5	3.8	0.8	0.4	-2.7	-3.8	-3.9
Hungary	5.0	8.0	1.3	-0.5	-2.1	-3.0	-3.1
Poland	2.5	3.5	1.5	-1.2	-1.4	-2.4	-0.2
Romania	9.8	18.0	2.1	3.7	0.2	-1.8	-2.3
Sweden	1.8	3.1	0.2	-0.7	0.1	-1.1	0.0
United Kingdom	2.6	4.3	0.5	1.0	-2.3	-7.6	-0.3
European Union	1.7	3.1	0.1	0.0	-1.5	-3.3	-2.0
United States(2)	2.2	3.1	1.0	1.2	1.9	-3.3	-1.0
Japan(3)	-0.1	0.5	-0.8	1.2	3.2	-2.3	-3.5

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)



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.

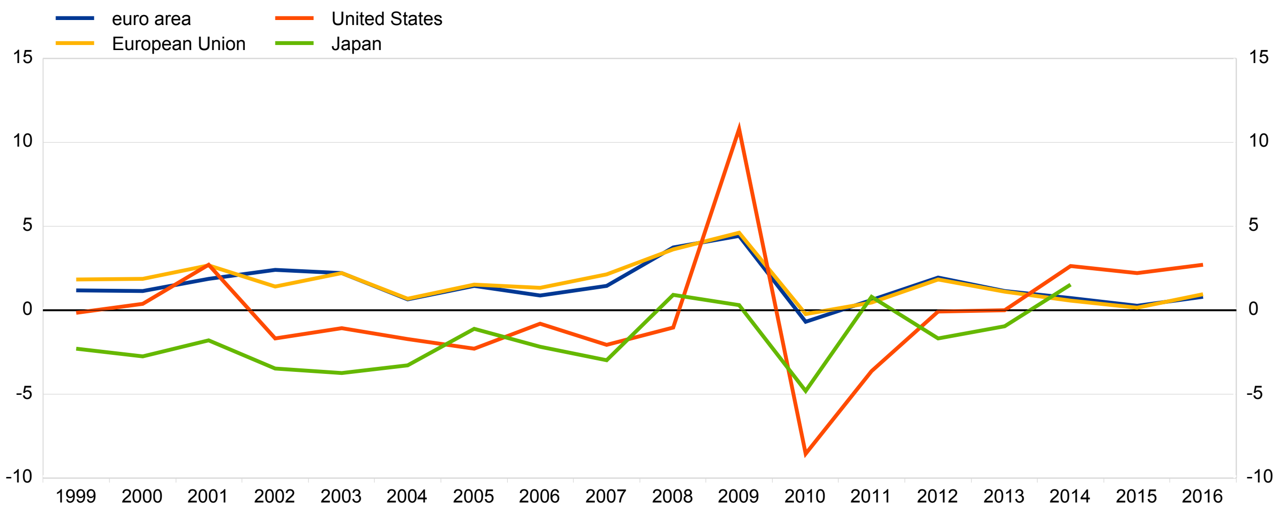
3 Prices and costs

3.5 Unit labour costs
(annual percentage changes)

	1999-2016 1),2)	1999-2008 1)	2009-2016 2)	2013	2014	2015	2016
Belgium	1.6	1.8	1.3	2.2	-0.2	-0.5	0.2
Germany	1.0	0.2	2.0	1.9	2.0	1.6	1.4
Estonia	4.9	7.0	2.4	4.4	2.1	7.2	4.3
Ireland	0.2	3.8	-4.6	2.8	-4.5	-16.5	.
Greece	1.7	3.6	-0.6	-6.9	-2.4	-2.2	2.1
Spain	1.6	3.3	-0.6	-0.6	-0.3	0.2	-0.4
France	1.6	1.9	1.4	1.2	0.9	0.3	0.8
Italy	2.0	2.7	1.1	0.7	0.0	0.9	0.8
Cyprus	1.7	3.2	-0.1	-5.4	-4.0	-0.9	-0.7
Latvia	4.9	8.8	0.1	5.1	4.9	5.4	4.8
Lithuania	2.1	2.8	1.2	3.1	3.2	4.8	4.7
Luxembourg	2.9	3.6	2.1	0.0	0.5	0.1	.
Malta	2.2	2.6	1.8	1.3	-1.5	-0.2	1.1
Netherlands	1.7	2.0	1.1	1.1	-0.1	-0.8	.
Austria	1.4	1.0	2.0	2.3	2.1	1.5	1.2
Portugal	1.3	2.6	-0.3	1.8	-1.3	-0.5	1.7
Slovenia	3.1	4.6	1.2	0.4	-1.3	0.3	1.7
Slovakia	2.6	3.6	1.3	0.3	0.7	1.3	0.9
Finland	1.8	1.6	2.2	1.4	1.1	1.0	-0.1
Euro area	1.5	1.7	1.2	1.2	0.7	0.3	0.8
Bulgaria	4.9	5.2	4.5	7.4	4.6	2.3	0.2
Czech Republic	2.1	2.8	1.2	0.5	0.4	-0.5	3.1
Denmark	2.0	2.7	1.2	0.6	0.8	1.2	2.6
Croatia	1.9	4.0	-0.2	-2.2	-2.4	-0.5	-2.7
Hungary	4.2	6.0	2.0	0.6	2.1	0.6	5.5
Poland	0.9	0.9	1.0	0.2	0.6	-1.2	.
Romania	12.4	21.6	0.4	-0.6	4.3	-3.8	.
Sweden	2.0	2.2	1.8	1.7	1.0	0.9	0.9
United Kingdom	2.3	2.8	1.6	1.4	0.0	0.7	2.4
European Union	1.6	1.9	1.2	1.1	0.6	0.2	1.0
United States	-0.5	-0.8	0.0	0.0	2.6	2.2	2.7
Japan	-1.7	-2.3	-0.8	-0.9	1.5	.	.

Sources: Eurostat, national data from the BIS databank (for the United States) and ECB calculations.
1) Data for Luxembourg, Malta, Croatia, the euro area and the European Union available since 2001; and for Poland since 2003.
2) Where data are not available for 2016, the average indicated is for the periods 1999-2015 and 2009-2015. However, for Japan the average refers to the periods 1999-2014 and 2009-2014.

Chart 3.5 Unit labour costs
(annual percentage changes)



Sources: Eurostat, national data from the BIS databank (for the United States) and ECB calculations.

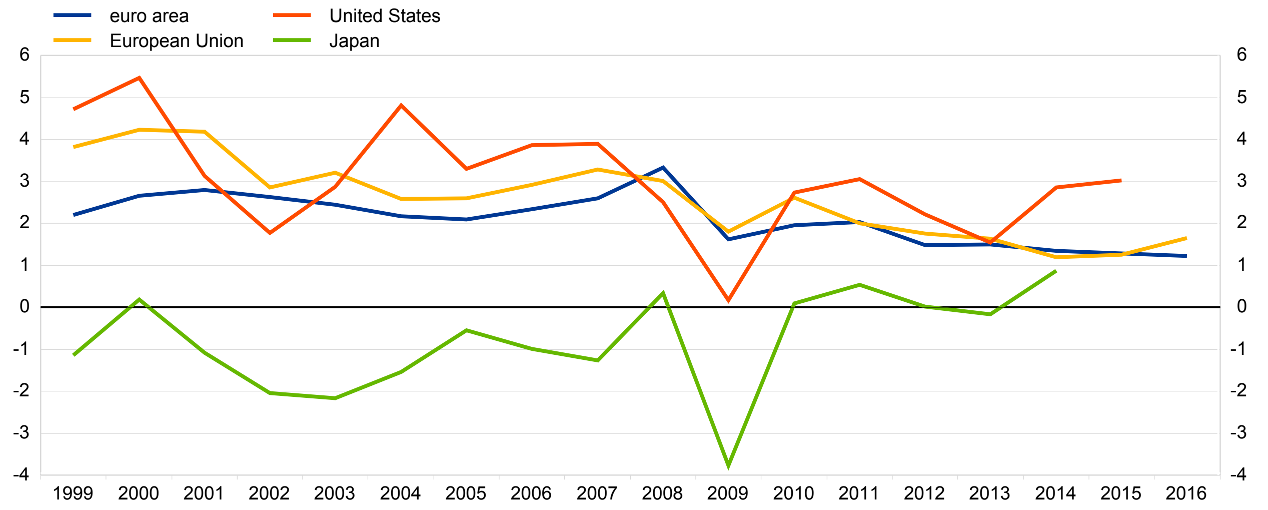
3 Prices and costs

3.6 Compensation per employee
(annual percentage changes)

	1999-2016 1),2)	1999-2008 1)	2009-2016 2)	2013	2014	2015	2016
Belgium	2.3	2.9	1.5	2.5	1.0	0.0	0.1
Germany	1.6	1.2	2.2	1.8	2.8	2.4	2.3
Estonia	8.3	12.4	3.4	4.6	4.2	5.8	5.6
Ireland	3.5	5.7	0.3	1.4	1.8	2.8	.
Greece	2.2	6.0	-2.2	-7.5	-2.1	-2.9	0.8
Spain	2.2	3.5	0.7	0.3	0.1	0.9	0.1
France	2.4	2.8	1.7	1.6	1.1	1.1	1.3
Italy	1.7	2.6	0.6	0.8	0.1	1.0	0.4
Cyprus	2.4	4.5	-0.2	-5.4	-3.8	-1.1	-0.6
Latvia	9.2	15.1	2.3	5.5	8.6	6.9	6.9
Lithuania	6.4	9.6	2.6	5.4	4.7	5.3	5.0
Luxembourg	2.8	3.5	2.0	2.3	2.6	0.9	.
Malta	3.3	3.9	2.6	2.0	1.5	3.3	2.4
Netherlands	2.5	3.2	1.5	2.1	1.6	0.2	.
Austria	2.1	2.3	1.8	2.1	1.9	1.9	1.3
Portugal	2.2	3.8	0.3	3.6	-1.8	-0.3	1.5
Slovenia	5.0	7.9	1.5	0.5	1.3	1.4	2.2
Slovakia	5.8	8.3	2.7	2.6	1.8	3.1	1.8
Finland	2.7	3.3	1.9	1.3	1.0	1.6	0.9
Euro area	2.1	2.5	1.6	1.5	1.3	1.3	1.2
Bulgaria	8.1	9.1	6.9	8.8	5.6	5.6	3.1
Czech Republic	4.5	6.5	2.0	-0.3	2.6	2.6	3.7
Denmark	2.9	3.6	2.0	1.6	1.5	1.5	2.0
Croatia	2.6	5.3	-0.1	-0.7	-5.4	-0.3	-0.5
Hungary	6.0	9.6	1.8	1.6	1.3	1.5	5.3
Poland	3.7	3.5	3.9	1.7	2.2	1.1	.
Romania	17.9	30.2	2.3	3.8	6.7	0.9	.
Sweden	3.5	4.1	2.7	2.0	2.2	3.5	2.5
United Kingdom	3.3	4.4	1.9	2.1	0.7	1.1	2.8
European Union	2.6	3.3	1.7	1.6	1.2	1.3	1.6
United States	3.0	3.6	2.1	1.5	2.9	3.0	.
Japan	-0.8	-1.0	-0.4	-0.2	0.9	.	.

Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.
1) Data for Luxembourg, Malta, Croatia, the euro area and the European Union available since 2001; and for Poland since 2003.
2) Where data are not available for 2016, the average indicated is for the periods 1999-2015 and 2009-2015. However, for Japan the average refers to the periods 1999-2014 and 2009-2014.

Chart 3.6 Compensation per employee
(annual percentage changes)



Sources: Eurostat, OECD (for the United States and Japan) and ECB calculations.

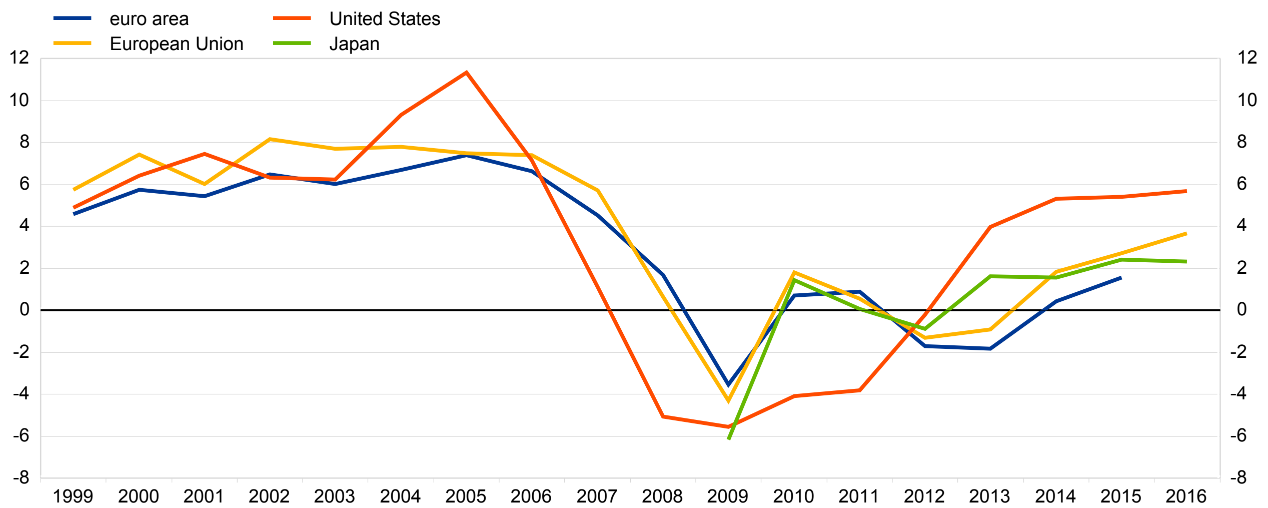
3 Prices and costs

3.7 Residential property prices
(annual percentage changes)

	1999-2016 1),2)	1999-2008 1)	2009-2016 2)	2013	2014	2015	2016
Belgium	5.5	7.8	2.4	1.7	0.7	3.7	.
Germany	2.3	1.4	2.8	3.2	3.1	4.5	6.0
Estonia	5.4	17.7	0.5	10.7	13.7	6.9	.
Ireland	3.8	10.6	-4.1	3.5	17.1	8.0	6.6
Greece	1.7	8.6	-6.4	-10.8	-7.5	-5.0	-2.3
Spain	3.7	10.5	-5.4	-10.6	0.3	3.6	.
France	5.0	9.3	-0.2	-2.1	-1.8	-1.9	1.0
Italy	2.2	5.6	-2.4	-5.7	-4.4	-2.6	.
Cyprus	3.9	15.3	-4.9	-6.5	-8.8	-4.3	.
Latvia	-0.5	17.4	-5.1	6.8	6.0	-3.4	.
Lithuania	8.5	20.6	-5.2	3.6	7.6	4.8	.
Luxembourg	3.8	3.3	3.8	5.0	4.4	5.4	.
Malta	5.4	17.2	0.8	-0.4	2.6	5.0	.
Netherlands	3.3	7.4	-1.6	-6.5	0.9	2.8	5.0
Austria	2.8	1.0	5.5	4.7	3.4	4.2	.
Portugal	-1.0	-	-1.0	-1.9	4.3	3.1	.
Slovenia	1.5	14.4	-3.6	-5.2	-6.6	0.8	.
Slovakia	2.8	9.9	-2.9	-0.9	-0.8	0.9	.
Finland	2.6	4.1	2.0	1.2	-0.4	0.0	.
Euro area	3.0	5.5	-0.5	-1.8	0.4	1.6	.
Bulgaria	2.2	22.7	-5.4	-2.2	1.4	2.8	.
Czech Republic	-0.1	-	-0.1	0.0	2.4	4.0	.
Denmark	4.0	10.0	0.0	3.9	3.7	7.0	.
Croatia	-3.0	-	-3.0	-4.0	-1.6	-2.9	.
Hungary	-0.1	2.3	-0.4	-2.6	4.3	11.0	.
Poland	-1.1	-	-1.1	-4.4	1.0	1.5	.
Romania	-4.7	-	-4.7	-0.2	-2.3	3.7	.
Sweden	7.5	8.5	6.0	5.5	9.4	13.1	.
United Kingdom	6.2	9.5	1.6	2.6	8.0	6.0	7.5
European Union	3.7	6.4	0.0	-0.9	1.9	2.7	.
United States	3.2	5.4	0.1	4.0	5.3	5.4	5.7
Japan	1.0	-	1.0	1.6	1.6	2.4	.

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 2016, the average indicated is for the periods 1999-2015 and 2009-2015

Chart 3.7 Residential property prices
(annual percentage changes)



Sources: National sources and ECB.

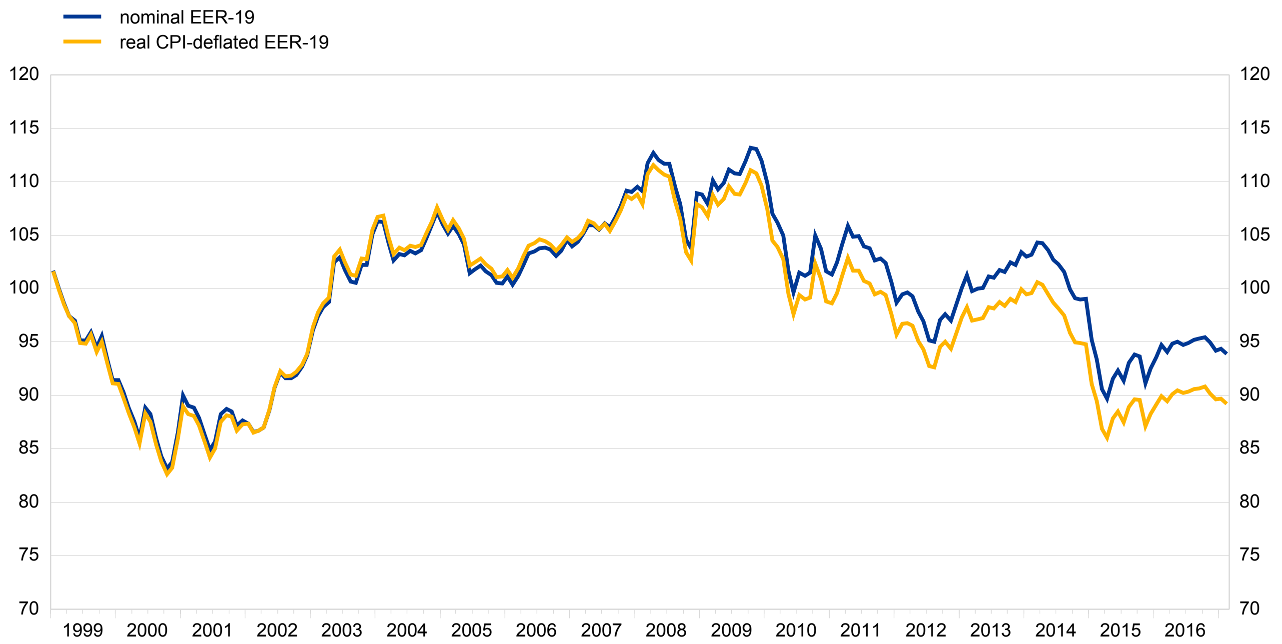
4 Exchange rates and balance of payments

4.1 Effective exchange rates
(period averages; index: 1999 Q1=100)

	1999-2016	1999-2008	2009-2016	2013	2014	2015	2016
EER-19							
Nominal	99.6	98.8	100.7	101.2	101.8	92.4	94.8
Real CPI	98.2	98.8	97.5	98.2	97.8	88.4	90.1
Real PPI	97.6	98.6	96.3	97.1	97.0	89.3	91.4
Real GDP deflator	95.3	96.9	93.0	91.7	91.9	83.7	
Real ULCM (1)	99.2	97.3	102.0	101.0	98.5	85.0	
Real ULCT	98.7	97.6	100.4	99.0	100.0	90.9	
EER-38							
Nominal	107.3	103.7	111.8	111.9	114.7	106.5	110.4
Real CPI	96.8	97.9	95.5	95.5	96.1	87.8	90.0

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.

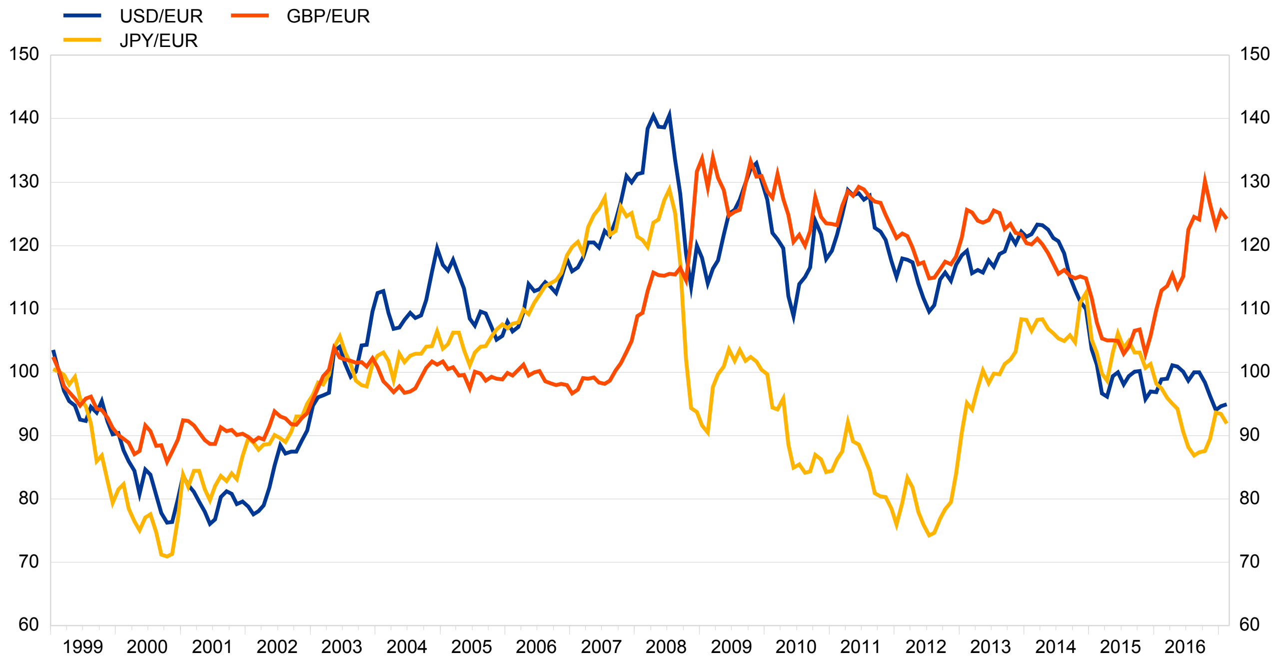
4 Exchange rates and balance of payments

4.2 Bilateral exchange rates
(units of national currency per euro; period averages)

	1999-2016 1)	1999-2008 1)	2009-2016	2013	2014	2015	2016
Chinese renminbi	8.876	9.468	8.285	8.165	8.186	6.973	7.352
Croatian kuna	7.450	7.406	7.494	7.579	7.634	7.614	7.533
Czech koruna	28.956	31.193	26.161	25.980	27.536	27.279	27.034
Danish krone	7.448	7.446	7.451	7.458	7.455	7.459	7.445
Hungarian forint	271.348	253.282	293.930	296.873	308.706	309.996	311.438
Japanese yen	127.446	130.952	123.063	129.663	140.306	134.314	120.197
Polish zloty	4.081	3.991	4.195	4.197	4.184	4.184	4.363
Pound sterling	0.742	0.674	0.829	0.849	0.806	0.726	0.819
Romanian leu	3.682	3.132	4.369	4.419	4.444	4.445	4.490
Swedish krona	9.210	9.132	9.308	8.652	9.099	9.353	9.469
Swiss franc	1.416	1.555	1.241	1.231	1.215	1.068	1.090
US dollar	1.212	1.155	1.284	1.328	1.329	1.110	1.107

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 Exchange rates and balance of payments

4.3 Real effective exchange rates 1)

(deflated by consumer price indices; period averages; index: 1999 Q1 = 100)

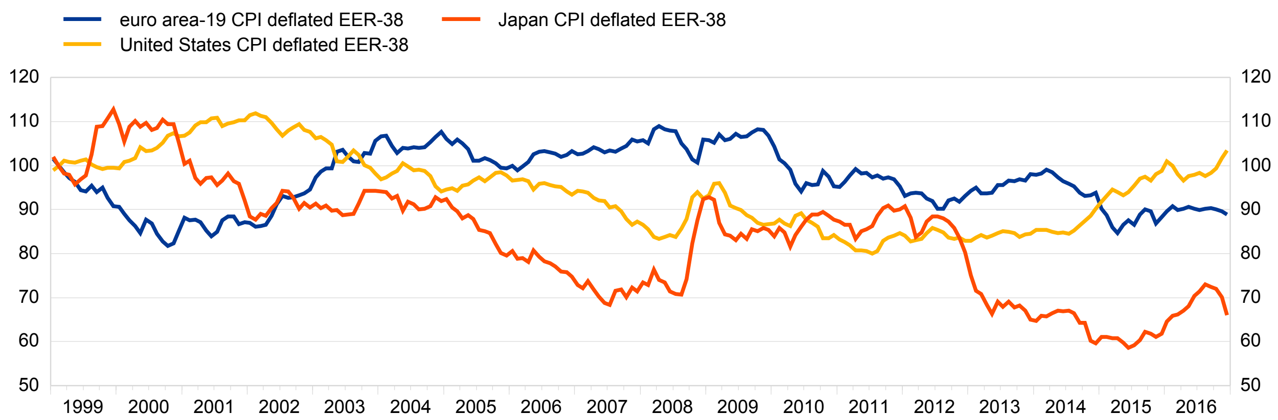
	1999-2016	1999-2008	2009-2016	2013	2014	2015	2016
Belgium	99.7	99.2	100.3	100.5	100.7	96.6	99.1
Germany	93.1	95.2	95.2	90.3	90.9	86.2	87.5
Estonia	114.1	106.4	123.7	124.4	126.2	124.9	126.9
Ireland	108.2	108.9	107.2	106.8	106.0	97.9	99.3
Greece	101.2	99.7	102.9	102.5	100.7	95.7	96.6
Spain	106.1	104.8	107.8	108.7	108.1	102.7	103.5
France	96.3	97.6	94.7	94.4	94.7	90.4	91.5
Italy	99.8	100.2	99.3	99.8	99.8	95.1	96.0
Cyprus	104.6	104.0	105.3	106.4	105.7	100.1	100.0
Latvia	109.3	104.7	114.9	112.5	114.0	113.2	114.2
Lithuania	121.9	115.7	129.7	128.7	130.1	127.5	129.7
Luxembourg	106.1	104.4	108.1	109.0	109.2	104.7	105.4
Malta	105.8	105.1	106.6	106.7	106.7	101.4	103.3
Netherlands	101.4	102.5	99.9	100.6	100.7	95.3	96.3
Austria	96.5	97.1	95.7	95.7	97.0	94.5	96.0
Portugal	102.7	103.1	102.2	102.2	101.6	99.2	100.5
Slovenia	99.9	99.3	100.6	100.9	101.3	97.6	98.0
Slovakia	162.6	139.4	191.7	193.1	193.4	187.2	188.5
Finland	96.2	96.9	95.2	94.8	96.6	93.3	94.5
Euro area	96.8	97.9	95.5	95.5	96.1	87.8	90.0
Bulgaria	132.8	120.9	147.8	148.8	146.9	140.7	139.9
Czech Republic	132.6	122.4	145.4	146.1	138.1	134.4	137.9
Denmark	98.9	99.5	98.1	97.1	97.7	93.8	95.0
Croatia	104.5	103.5	105.7	105.2	104.7	100.3	101.5
Hungary	129.0	125.4	133.5	134.4	129.2	123.5	124.6
Poland	117.2	117.4	116.9	117.5	118.1	113.4	109.3
Romania	133.0	127.5	140.0	141.5	142.9	137.7	135.8
Sweden	93.3	95.2	90.8	96.1	91.5	85.8	86.6
United Kingdom	90.3	97.9	80.7	79.4	84.9	88.7	79.5
European Union	-	-	-	-	-	-	-
United States	94.5	99.3	88.5	84.2	86.1	95.3	99.2
Japan	83.5	89.4	76.2	68.8	64.9	60.7	68.9

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, the table shows the harmonised competitiveness indicators calculated vis-à-vis these same trading partners plus the other euro area countries.
For the non-euro area countries, the real effective exchange rate of the euro vis-à-vis 38 trading partners 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.

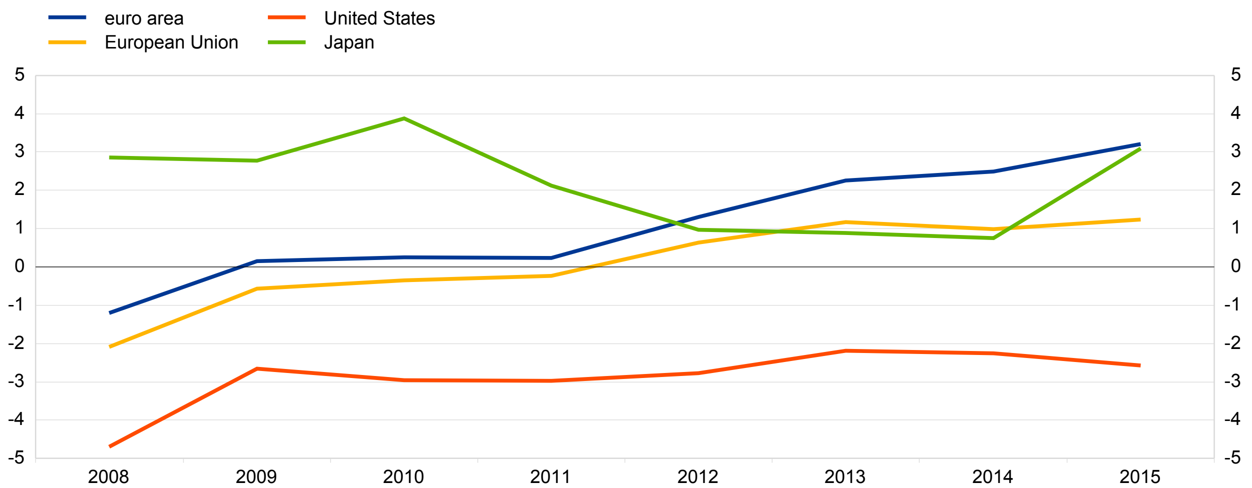
4 Exchange rates and balance of payments

4.4 Balance of payments: net current account
(chain-linked volumes; percentages of GDP; period averages; non-working day and non-seasonally adjusted)

	2008-2015	2008-2011	2012-2015	2012	2013	2014	2015
Belgium	-0.2	-0.3	-0.2	-0.1	-0.3	-0.7	0.5
Germany	6.7	5.7	7.8	7.2	7.1	7.8	9.0
Estonia	-0.2	-0.7	0.3	-2.1	-0.4	1.1	2.6
Ireland	-0.5	-4.1	3.2	-2.8	2.3	1.8	11.4
Greece	-7.0	-12.1	-1.8	-3.8	-2.0	-1.6	0.1
Spain	-2.1	-5.1	0.9	-0.2	1.5	1.1	1.4
France	-0.9	-0.9	-0.9	-1.2	-0.9	-1.1	-0.2
Italy	-0.8	-2.8	1.1	-0.4	1.0	2.0	1.7
Cyprus	-7.1	-9.5	-4.6	-6.2	-5.1	-4.4	-2.9
Latvia	-2.2	-1.8	-2.6	-4.0	-3.1	-2.2	-0.9
Lithuania	-1.8	-4.0	0.5	-1.3	1.7	4.0	-2.6
Luxembourg	6.4	6.9	6.0	6.4	6.1	5.6	5.8
Malta	0.7	-3.0	4.5	1.8	3.0	7.3	5.8
Netherlands	8.1	6.5	9.7	10.5	10.2	9.2	8.9
Austria	2.5	2.9	2.0	1.5	2.1	2.6	2.0
Portugal	-4.8	-9.6	0.1	-1.8	1.6	0.1	0.4
Slovenia	1.7	-1.4	4.8	2.6	4.9	6.4	5.4
Slovakia	-1.9	-4.9	1.1	1.0	1.9	1.2	0.2
Finland	-0.2	0.9	-1.4	-2.0	-1.7	-1.2	-0.5
Euro area	1.1	-0.1	2.3	1.3	2.3	2.5	3.2
Bulgaria	-3.7	-7.6	0.2	-0.9	1.4	0.1	0.4
Czech Republic	-1.4	-2.5	-0.3	-1.6	-0.5	0.2	0.9
Denmark	6.5	4.8	8.2	6.5	7.3	9.3	9.7
Croatia	-1.0	-3.9	2.0	-0.1	0.9	2.1	5.0
Hungary	0.5	-1.7	2.7	1.8	3.8	2.0	3.3
Poland	-3.6	-5.3	-2.0	-3.8	-1.3	-2.1	-0.6
Romania	-4.3	-6.7	-2.0	-5.0	-1.2	-0.7	-1.3
Sweden	5.9	6.2	5.6	6.3	6.0	5.1	5.2
United Kingdom	-3.8	-2.7	-4.9	-4.0	-4.7	-5.4	-5.4
European Union	0.1	-0.8	1.0	0.6	1.2	1.0	1.2
United States	-2.9	-3.3	-2.4	-2.8	-2.2	-2.3	-2.6
Japan	2.2	2.9	1.4	1.0	0.9	0.8	3.1

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.

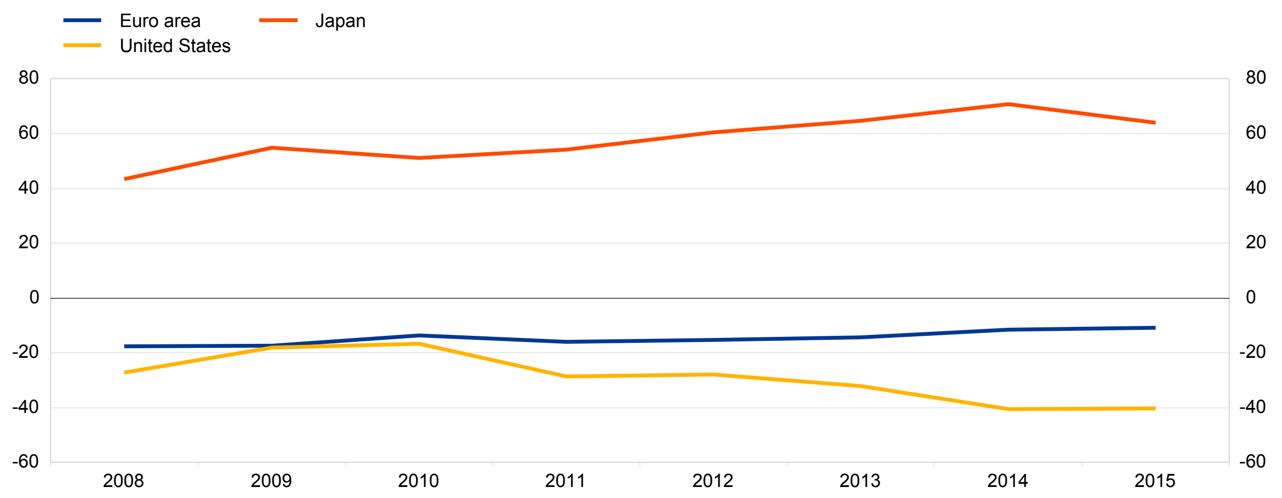
4 Exchange rates and balance of payments

4.5 Net international investment position
(chain-linked volumes; percentages of GDP; end-of-period averages)

	2008-2015 [1]	2008-2011 [1]	2012-2015	2012	2013	2014	2015
Belgium	58.9	58.5	59.2	53.9	54.8	62.9	65.4
Germany	31.4	22.9	39.9	28.7	35.3	42.8	52.9
Estonia	-61.8	-70.3	-53.3	-55.5	-56.5	-53.6	-47.4
Ireland	-147.2	-121.0	-173.4	-146.0	-142.1	-172.9	-232.6
Greece	-106.1	-87.2	-125.0	-116.4	-127.9	-127.5	-128.2
Spain	-90.8	-88.5	-93.2	-90.0	-94.8	-97.7	-90.6
France	-13.9	-11.6	-16.2	-13.1	-17.1	-17.5	-17.1
Italy	-23.1	-20.9	-25.4	-24.5	-26.4	-25.7	-24.9
Cyprus	-121.9	-104.9	-139.0	-134.2	-142.7	-149.1	-130.2
Latvia	-78.2	-82.5	-73.9	-75.4	-75.0	-73.5	-71.8
Lithuania	-53.7	-55.1	-52.4	-57.7	-51.5	-50.7	-49.6
Luxembourg	22.4	-0.7	45.4	56.3	48.5	37.1	39.8
Malta	21.9	8.7	35.1	20.5	21.7	43.0	55.3
Netherlands	26.2	6.3	46.2	27.4	32.0	59.6	65.9
Austria	-2.3	-5.5	0.9	-3.3	1.4	2.4	3.2
Portugal	-108.9	-101.4	-116.4	-115.8	-118.1	-117.6	-114.3
Slovenia	-44.9	-43.8	-46.0	-50.6	-47.7	-45.6	-40.3
Slovakia	-63.3	-62.5	-64.1	-63.2	-64.4	-65.9	-62.9
Finland	5.6	7.7	3.6	12.4	4.2	-2.9	0.7
Euro area	-14.6	-16.2	-13.0	-15.4	-14.4	-11.5	-10.9
Bulgaria	-81.4	-89.8	-77.2	-83.8	-78.4	-80.7	-65.8
Czech Republic	-40.1	-42.2	-38.0	-46.8	-39.3	-35.2	-30.6
Denmark	24.3	9.2	39.5	37.1	38.7	46.2	35.9
Croatia	-85.3	-85.0	-85.6	-90.4	-88.5	-86.0	-77.3
Hungary	-91.3	-104.3	-78.2	-93.7	-84.2	-74.4	-60.6
Poland	-62.3	-57.2	-67.4	-67.7	-70.2	-68.8	-62.7
Romania	-61.7	-59.4	-64.1	-70.1	-66.9	-62.1	-57.2
Sweden	-6.7	-7.0	-6.4	-16.6	-14.0	1.3	3.7
United Kingdom	-10.1	-3.1	-17.1	-24.3	-17.6	-20.8	-5.8
European Union	-	-	-	-	-	-	-
United States	-29.0	-22.7	-35.3	-28.0	-32.2	-40.5	-40.4
Japan	57.9	50.9	65.0	60.5	64.7	70.7	64.0

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).

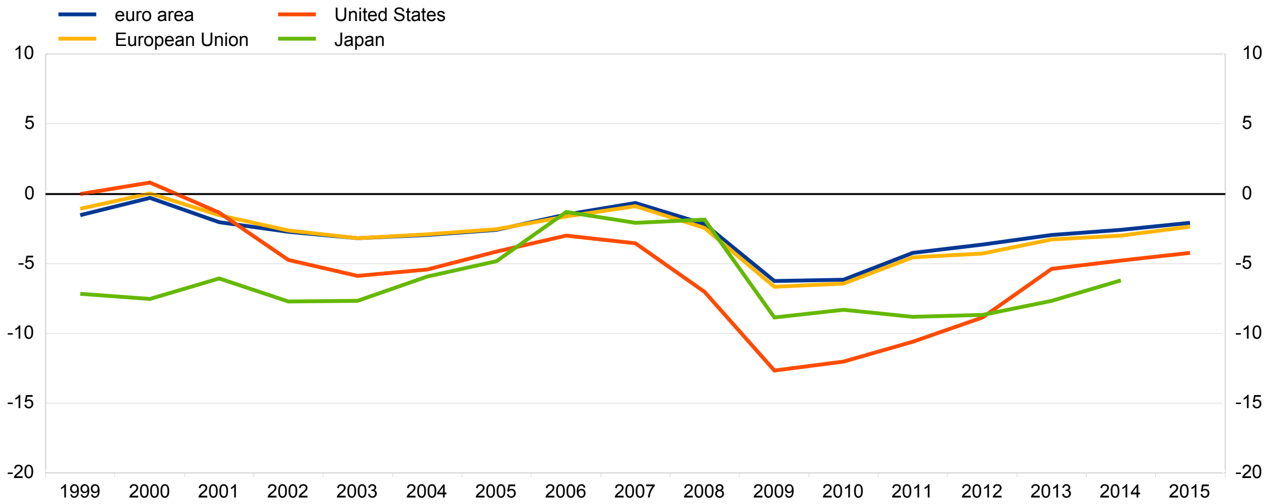
5 Fiscal developments

5.1 General government balance
(percentages of GDP)

	1999-2015 [1]	1999-2008 [1]	2009-2015	2012	2013	2014	2015
Belgium	-1.9	-0.6	-3.8	-4.2	-3.0	-3.1	-2.5
Germany	-1.7	-2.1	-1.1	0.0	-0.2	0.3	0.7
Estonia	0.3	0.6	-0.1	-0.3	-0.2	0.7	0.1
Ireland	-4.1	0.7	-11.1	-8.0	-5.7	-3.7	-1.9
Greece	-8.0	-6.7	-10.0	-8.8	-13.2	-3.6	-7.5
Spain	-3.6	-0.3	-8.4	-10.5	-7.0	-6.0	-5.1
France	-3.6	-2.6	-5.1	-4.8	-4.0	-4.0	-3.5
Italy	-3.1	-2.9	-3.5	-2.9	-2.7	-3.0	-2.6
Cyprus	-3.4	-2.1	-5.2	-5.8	-4.9	-8.8	-1.1
Latvia	-2.6	-1.9	-3.6	-0.8	-0.9	-1.6	-1.3
Lithuania	-3.0	-1.9	-4.5	-3.1	-2.6	-0.7	-0.2
Luxembourg	1.6	2.5	0.5	0.3	1.0	1.5	1.6
Malta	-4.0	-4.9	-2.7	-3.6	-2.6	-2.1	-1.4
Netherlands	-1.7	-0.5	-3.6	-3.9	-2.4	-2.3	-1.9
Austria	-2.4	-2.1	-2.8	-2.2	-1.4	-2.7	-1.0
Portugal	-5.5	-4.2	-7.2	-5.7	-4.8	-7.2	-4.4
Slovenia	-3.9	-2.2	-6.4	-4.1	-15.0	-5.0	-2.7
Slovakia	-4.8	-5.0	-4.6	-4.3	-2.7	-2.7	-2.7
Finland	1.2	3.8	-2.4	-2.2	-2.6	-3.2	-2.8
Euro area	-2.8	-2.0	-4.0	-3.6	-3.0	-2.6	-2.1
Bulgaria	-0.7	0.6	-2.4	-0.3	-0.4	-5.5	-1.7
Czech Republic	-3.3	-3.6	-2.9	-3.9	-1.2	-1.9	-0.6
Denmark	0.7	2.4	-1.8	-3.5	-1.1	1.5	-1.7
Croatia	-4.7	-3.7	-5.6	-5.3	-5.3	-5.4	-3.3
Hungary	-4.9	-6.0	-3.3	-2.3	-2.6	-2.1	-1.6
Poland	-4.2	-3.9	-4.7	-3.7	-4.1	-3.4	-2.6
Romania	-3.4	-2.8	-4.2	-3.7	-2.1	-0.8	-0.8
Sweden	0.4	1.2	-0.7	-1.0	-1.4	-1.6	0.2
United Kingdom	-4.2	-2.0	-7.3	-8.3	-5.7	-5.7	-4.3
European Union	-2.9	-1.9	-4.4	-4.3	-3.3	-3.0	-2.4
United States	-5.5	-3.4	-8.4	-8.9	-5.4	-4.8	-4.2
Japan	-6.3	-5.2	-8.1	-8.7	-7.7	-6.2	.

Sources: ESCB and OECD.
1) Data for Luxembourg available since 2000;for Croatia since 2002.

Chart 5.1 General government balance
(percentages of GDP)



Sources: ESCB and OECD.

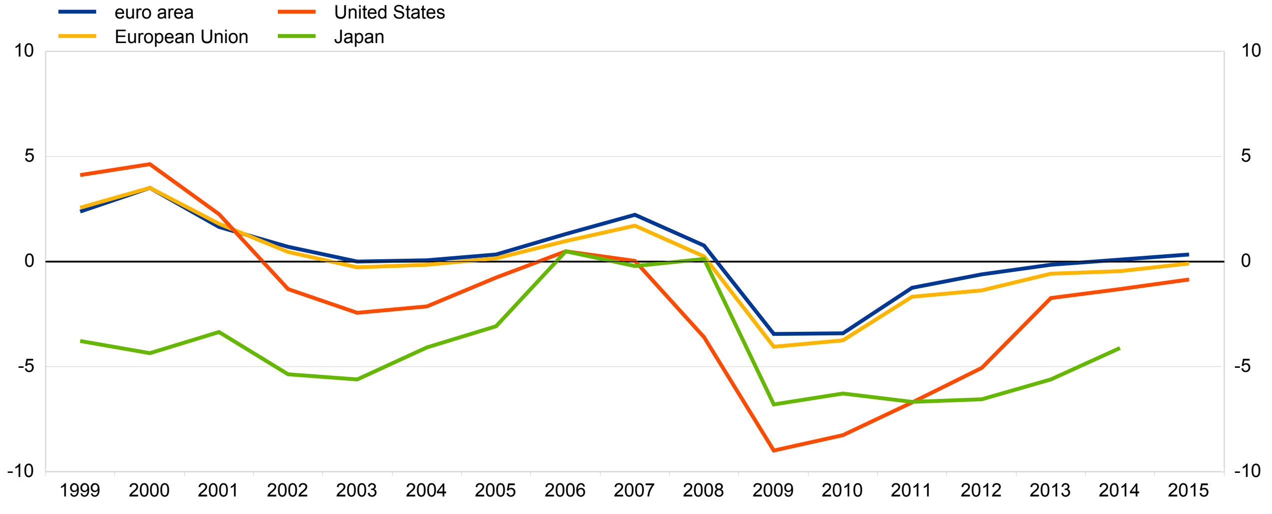
5 Fiscal developments

5.2 Primary general government balance [1)]
(percentages of GDP)

	1999-2015 [2)]	1999-2008 [2)]	2009-2015	2012	2013	2014	2015
Belgium	2.6	4.7	-0.3	-0.6	0.3	0.2	0.5
Germany	0.9	0.8	1.1	2.3	1.8	2.1	2.2
Estonia	0.5	0.8	0.1	-0.1	-0.1	0.8	0.2
Ireland	-2.0	2.1	-7.8	-3.9	-1.4	0.1	0.7
Greece	-2.8	-1.3	-5.0	-3.7	-9.1	0.4	-3.9
Spain	-1.1	2.0	-5.6	-7.5	-3.5	-2.5	-2.0
France	-1.0	0.1	-2.7	-2.2	-1.8	-1.8	-1.5
Italy	1.8	2.4	1.1	2.3	2.1	1.6	1.5
Cyprus	-0.6	0.9	-2.6	-2.9	-1.8	-6.0	1.7
Latvia	-1.6	-1.3	-2.1	0.8	0.6	-0.1	0.1
Lithuania	-1.6	-0.8	-2.8	-1.2	-0.9	0.9	1.3
Luxembourg	2.0	2.8	1.0	0.9	1.5	1.9	2.0
Malta	-0.6	-1.2	0.3	-0.6	0.3	0.8	1.2
Netherlands	0.4	2.1	-2.0	-2.2	-0.9	-0.8	-0.6
Austria	0.6	1.1	-0.1	0.5	1.2	-0.3	1.3
Portugal	-2.1	-1.4	-3.0	-0.8	0.0	-2.3	0.2
Slovenia	-1.9	-0.4	-4.2	-2.1	-12.5	-1.9	0.3
Slovakia	-2.6	-2.4	-2.9	-2.6	-0.8	-0.8	-1.0
Finland	2.9	5.8	-1.1	-0.8	-1.4	-1.9	-1.6
Euro area	0.3	1.3	-1.2	-0.6	-0.2	0.1	0.3
Bulgaria	1.0	2.9	-1.6	0.5	0.3	-4.6	-0.8
Czech Republic	-2.2	-2.6	-1.6	-2.5	0.1	-0.6	0.4
Denmark	3.0	5.0	0.0	-1.7	0.6	3.0	-0.1
Croatia	-2.1	-1.8	-2.5	-1.9	-1.8	-1.9	0.3
Hungary	-0.5	-1.5	0.9	2.3	2.0	1.9	2.0
Poland	-1.7	-1.2	-2.4	-1.0	-1.5	-1.5	-0.8
Romania	-1.4	-0.7	-2.5	-1.9	-0.3	0.8	0.9
Sweden	2.2	3.5	0.2	0.0	-0.6	-0.9	0.7
United Kingdom	-1.9	0.1	-4.7	-5.4	-2.8	-3.0	-2.0
European Union	-0.1	1.1	-1.7	-1.4	-0.6	-0.5	-0.1
United States	-1.9	0.1	-4.7	-5.1	-1.7	-1.3	-0.8
Japan	-4.1	-2.9	-6.0	-6.6	-5.6	-4.1	.

Sources: ESCB and OECD.
1) General government balance excluding the interest expenditure.
2) Data for Luxembourg available since 2000; and for Croatia since 2002.

Chart 5.2 Primary general government balance
(percentages of GDP)



Sources: ESCB and OECD.

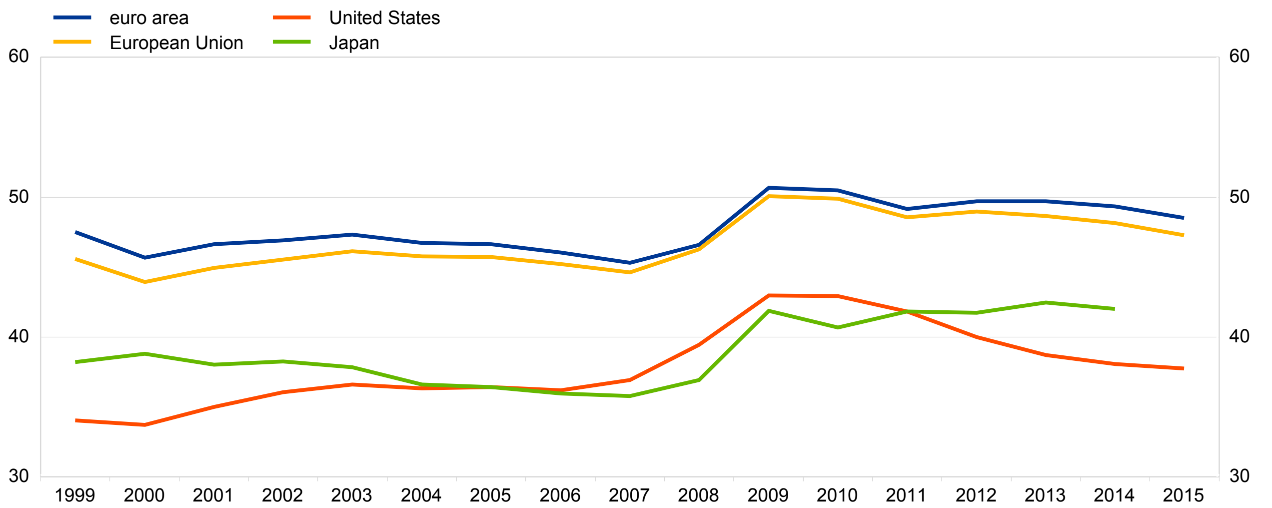
5 Fiscal developments

5.3 General government expenditure
(percentages of GDP)

	1999-2015 [1]	1999-2008 [1]	2009-2015	2012	2013	2014	2015
Belgium	51.7	49.6	54.6	55.8	55.7	55.1	53.9
Germany	45.6	45.8	45.3	44.3	44.7	44.4	44.0
Estonia	37.6	35.9	40.1	39.3	38.5	38.5	40.3
Ireland	38.1	34.0	43.9	41.8	39.8	37.8	29.4
Greece	50.1	46.7	54.9	55.4	62.3	50.6	55.4
Spain	41.7	39.0	45.6	48.1	45.6	44.9	43.8
France	54.1	52.3	56.7	56.8	57.0	57.3	57.0
Italy	48.5	47.1	50.5	50.8	50.8	50.9	50.4
Cyprus	39.4	37.2	42.5	41.9	41.3	48.2	40.1
Latvia	37.3	35.8	39.5	37.1	37.0	37.5	37.1
Lithuania	37.2	36.2	38.7	36.1	35.5	34.7	35.1
Luxembourg	42.1	41.0	43.6	44.3	43.4	42.3	42.1
Malta	42.1	42.1	42.1	42.5	41.8	43.2	43.4
Netherlands	44.7	43.2	46.9	47.1	46.3	46.2	45.1
Austria	51.7	51.3	52.2	51.5	51.2	52.8	51.6
Portugal	46.9	44.6	50.1	48.5	49.9	51.8	48.4
Slovenia	47.4	45.1	50.6	48.6	60.3	50.0	47.8
Slovakia	42.1	41.9	42.4	40.6	41.4	42.0	45.6
Finland	51.7	48.6	56.2	56.2	57.5	58.1	57.7
Euro area	47.8	46.5	49.7	49.7	49.7	49.4	48.5
Bulgaria	38.1	38.4	37.7	34.5	37.6	42.1	40.7
Czech Republic	42.5	42.2	43.0	44.5	42.6	42.2	42.0
Denmark	54.0	52.1	56.7	58.3	56.5	56.0	55.7
Croatia	46.9	46.0	47.8	47.1	48.3	48.3	46.9
Hungary	49.3	49.2	49.5	48.6	49.3	49.0	50.0
Poland	43.8	44.2	43.4	42.7	42.4	42.1	41.5
Romania	36.6	36.0	37.5	37.2	35.4	34.4	35.7
Sweden	52.3	52.9	51.6	51.7	52.4	51.5	50.3
United Kingdom	42.0	39.4	45.7	46.3	44.7	43.7	42.8
European Union	46.8	45.4	48.8	49.0	48.7	48.1	47.3
United States	37.8	36.1	40.3	40.0	38.7	38.1	37.7
Japan	39.0	37.3	41.8	41.8	42.5	42.0	.

Sources: ESCB and OECD.
1) Data for Luxembourg available since 2000; and for Croatia since 2002.

Chart 5.3 General government expenditure
(percentages of GDP)



Sources: ESCB and OECD.

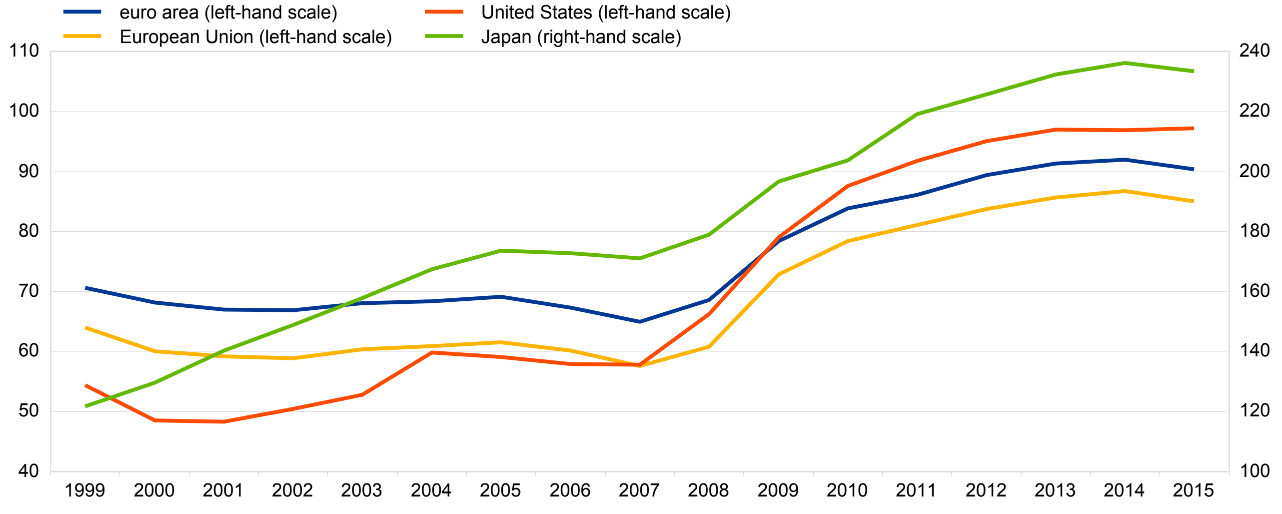
5 Fiscal developments

5.4 General government debt [1]
(percentages of GDP)

	1999-2015 [2]	1999-2008 [2]	2009-2015	2012	2013	2014	2015
Belgium	101.3	99.8	103.3	104.1	105.4	106.5	105.8
Germany	68.3	62.6	76.5	79.9	77.5	74.9	71.2
Estonia	6.5	5.0	8.6	9.7	10.2	10.7	10.1
Ireland	58.9	32.1	97.2	119.5	119.5	105.2	78.6
Greece	128.6	104.6	162.7	159.6	177.4	179.7	177.4
Spain	61.0	47.3	80.5	85.7	95.4	100.4	99.8
France	73.6	63.1	88.5	89.5	92.3	95.3	96.2
Italy	111.2	102.9	123.0	123.3	129.0	131.9	132.3
Cyprus	67.3	57.3	81.5	79.3	102.2	107.1	107.5
Latvia	24.3	12.8	40.6	41.3	39.0	40.7	36.3
Lithuania	27.0	19.6	37.6	39.8	38.7	40.5	42.7
Luxembourg	13.6	8.1	20.7	21.8	23.5	22.7	22.1
Malta	66.2	65.3	67.5	67.6	68.4	67.0	64.0
Netherlands	55.6	49.9	63.6	66.4	67.7	67.9	65.1
Austria	73.2	66.6	82.7	82.0	81.3	84.4	85.5
Portugal	83.2	60.8	115.1	126.2	129.0	130.6	129.0
Slovenia	38.9	25.3	58.4	53.9	71.0	80.9	83.2
Slovakia	42.8	39.4	47.7	52.2	54.7	53.6	52.5
Finland	45.3	39.8	53.1	53.9	56.5	60.2	63.6
Euro area	75.9	67.9	87.4	89.5	91.3	92.0	90.4
Bulgaria	29.7	38.3	18.7	16.7	17.0	27.0	26.0
Czech Republic	31.4	25.0	40.6	44.5	44.9	42.2	40.3
Denmark	43.0	42.7	43.5	45.2	44.7	44.8	40.4
Croatia	55.1	38.9	71.2	70.7	82.2	86.6	86.7
Hungary	67.3	60.0	77.7	78.2	76.6	75.7	74.7
Poland	47.0	43.1	52.5	53.7	55.7	50.2	51.1
Romania	25.2	18.8	34.2	37.3	37.8	39.4	37.9
Sweden	45.1	48.2	40.6	37.8	40.4	45.2	43.9
United Kingdom	56.8	39.5	81.5	85.1	86.2	88.1	89.1
European Union	69.2	60.3	81.9	83.8	85.7	86.7	85.0
United States	70.6	55.5	92.1	95.1	97.0	96.9	97.2
Japan	182.9	156.3	221.0	225.8	232.5	236.2	233.4

Sources: ESCB and OECD.
1) Gross debt (includes currency, deposits, debt securities and loans). The data are consolidated between the sub-sectors of general government, except for Japan.
2) Data for Bulgaria available since 2000; for Croatia 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

BIS	Bank for International Settlements
CPI	Consumer Price Index
DG ECFIN	Directorate General for Economic and Financial Affairs, European Commission
ECB	European Central Bank
EDP	excessive deficit procedure
EER	effective exchange rate
EMI	European Monetary Institute
EMU	Economic and Monetary Union
ERM	exchange rate mechanism
ESA 95	European System of Accounts 1995
ESCB	European System of Central Banks
ESRB	European Systemic Risk Board
EU	European Union
EUR	euro
GDP	gross domestic product
HICP	Harmonised Index of Consumer Prices
i.i.p.	international investment position
ILO	International Labour Organization
IMF	International Monetary Fund
MFI	monetary financial institution
MIP	macroeconomic imbalance procedure
NCB	national central bank
OECD	Organisation for Economic Co-operation and Development
SSM	Single Supervisory Mechanism
TSCG	Treaty on Stability, Coordination and Governance in the Economic and Monetary Union

Conventions used in the tables

"-" data do not exist/data are not applicable
"." data are not yet available

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