EUROPEAN CENTRAL BANK

EUROSYSTEM

# Economic Bulletin

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# Contents

# Update on economic and monetary developments

## Summary

Following several quarters of higher than expected growth, incoming information since the Governing Council's meeting in early March points towards some moderation, while remaining consistent with a solid and broad-based expansion of the euro area economy.[1] The risks surrounding the euro area growth outlook remain broadly balanced, but risks related to global factors, including the threat of increased protectionism, have become more prominent. Overall, the economy's underlying strength continues to support the Governing Council's confidence that inflation will converge towards its inflation aim of below, but close to, 2% over the medium term. At the same time, measures of underlying inflation remain subdued and have yet to show convincing signs of a sustained upward trend. In this context, the Governing Council will continue to monitor developments in the exchange rate and other financial conditions with regard to their possible implications for the inflation outlook. Overall, an ample degree of monetary stimulus remains necessary for underlying inflation pressures to continue to build up and support headline inflation developments over the medium term.

On the global level, survey indicators remain generally consistent with a steady economic expansion. However, the tariff announcements in recent weeks represent a risk to global momentum. Global trade indicators were mixed but on the whole signal some deceleration at the start of the year. Furthermore, geopolitical risks have led to a pick-up in oil prices.

Euro area sovereign bond yields have declined and sovereign bond spreads have decreased, the latter reflecting an improvement in country-specific macroeconomic fundamentals in the light of the ongoing economic expansion. Similarly, euro area equity prices have risen despite some episodes of heightened volatility. In foreign exchange markets, the euro has remained broadly unchanged in nominal effective terms.

The analysis of the latest economic data and survey results suggests some moderation in the pace of growth since the start of the year. This moderation may in part reflect a pull-back from the high pace of growth observed at the end of last year, while temporary factors may also be at work. Overall, however, growth is expected to remain solid and broad-based. Private consumption is supported by ongoing employment gains (which, in turn, partly reflect past labour market reforms) and by growing household wealth. Business investment continues to strengthen on the back of very favourable financing conditions, rising corporate profitability and solid

[1] Taking into account information available at the time of the Governing Council meeting of 26 April 2018.

demand. Housing investment continues to improve. In addition, the broad-based global expansion is providing impetus to euro area exports.

Euro area annual HICP inflation increased to 1.3% in March 2018, from 1.1% in February, mainly reflecting higher food price inflation. Looking ahead, on the basis of current futures prices for oil, annual rates of headline inflation are likely to hover around 1.5% for the remainder of the year. Measures of underlying inflation remain subdued overall. Going forward, they are expected to rise gradually over the medium term, supported by the ECB's monetary policy measures, the continuing economic expansion, the corresponding absorption of economic slack and rising wage growth.

The monetary analysis shows broad money (M3) continuing to expand at a robust pace, only slightly below the narrow range observed since mid-2015. M3 grew at an annual rate of 4.2% in February, reflecting the impact of the ECB's monetary policy measures and the low opportunity cost of holding the most liquid deposits. Accordingly, the narrow monetary aggregate M1 remained the main contributor to broad money growth, continuing to expand at a solid annual rate. The recovery in the growth of loans to the private sector observed since the beginning of 2014 is also proceeding. The euro area bank lending survey for the first quarter of 2018 indicates that loan growth continues to be supported by increasing demand across all loan categories, as well as a further easing in overall bank lending conditions.

On the basis of the economic analysis and the signals coming from the monetary analysis, the Governing Council confirmed the need for an ample degree of monetary accommodation to secure a sustained return of inflation rates towards levels that are below, but close to, 2% over the medium term. This continued monetary support is provided by the net asset purchases, by the sizeable stock of acquired assets and the ongoing and forthcoming reinvestments, and by the forward guidance on interest rates.

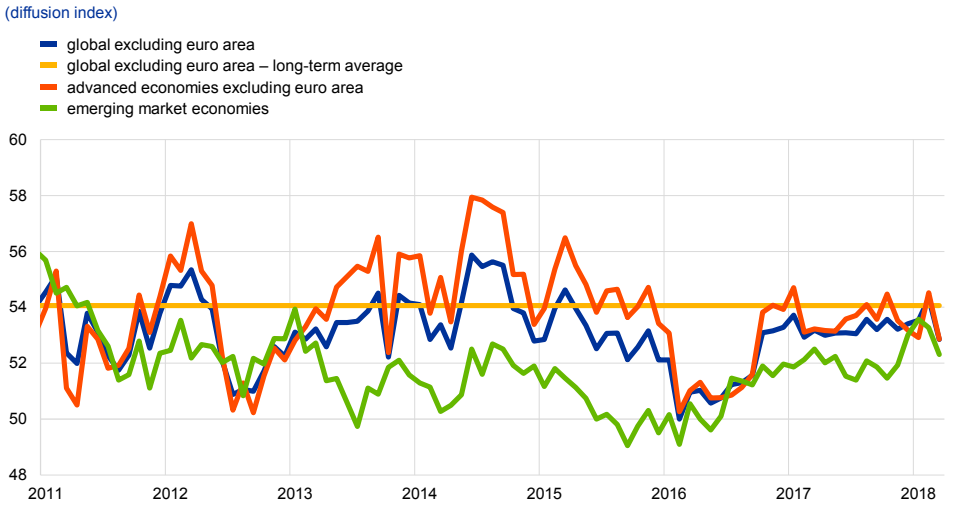
Accordingly, the Governing Council decided to keep the key ECB interest rates unchanged and continues to expect them to remain at their present levels for an extended period of time, and well past the horizon of the net asset purchases. Regarding non-standard monetary policy measures, the Governing Council confirmed that the net asset purchases, at the current monthly pace of €30 billion, are intended to run until the end of September 2018, or beyond, if necessary, and in any case until the Governing Council sees a sustained adjustment in the path of inflation consistent with its inflation aim. Finally, the Governing Council reiterated that the Eurosystem will continue to reinvest the principal payments from maturing securities purchased under the asset purchase programme for an extended period of time after the end of the net asset purchases, and in any case for as long as necessary.

# 1 External environment

**Global survey indicators remain consistent with a steady expansion of activity in the first quarter of 2018.** The global composite output Purchasing Managers' Index (PMI) excluding the euro area decreased in March (see Chart 1), following declines in the manufacturing and service sectors. In quarterly terms, the PMI in the first quarter of 2018 remained slightly above the level recorded in the second half of 2017, pointing to an external environment that remained supportive of the euro area. The PMI was broadly unchanged in the United States during the first quarter, while it decreased in the United Kingdom and, to a lesser extent, in Japan, on the back of weaker outcomes in March. In emerging market economies, the quarterly PMI picked up in Brazil and China, while it edged down in India and Russia.

**Chart 1**

Global composite output PMI




Sources: Haver Analytics, Markit and ECB staff calculations.
Notes: The latest observations are for March 2018. "Long-term average" refers to the period from January 1999 to March 2018.

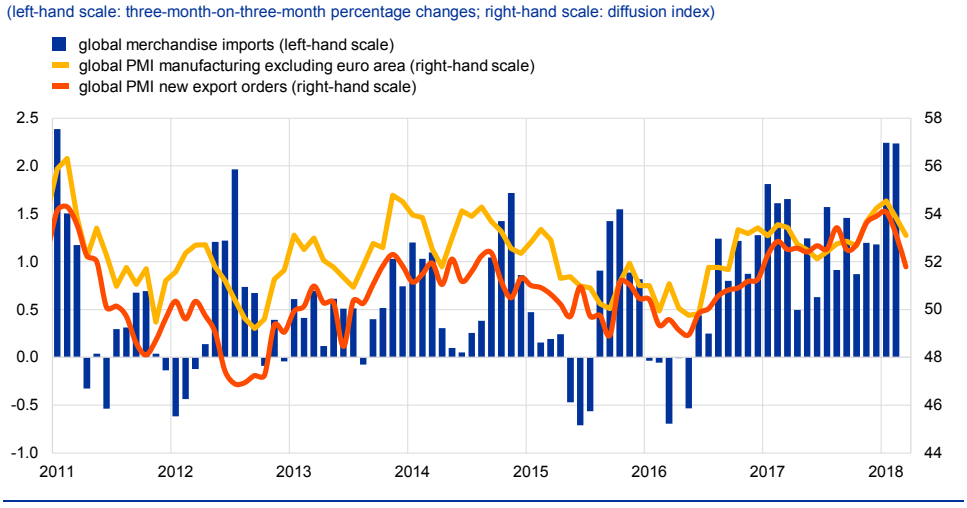
**The recent announcements of tariff increases by the United States represent a risk to global momentum.** In late March, President Trump signed an order to impose import tariffs on steel and aluminium, to protect US industries from foreign competition. Furthermore, the US Administration announced increases in tariffs on USD 50 billion of Chinese goods. China has responded with a pledge to increase tariffs on similar amounts of US imports. Viewed in isolation, the measures announced so far are expected to have only a very small macroeconomic effect. However, the risks associated with a rise in protectionism have clearly increased. Expectations of an escalation in the dispute would affect investment decisions, with potentially more significant effects on global activity. Box 1 contains a detailed analysis of the implications of rising trade tensions for the global economy.

**Global financial conditions remain supportive of the global outlook, sustained by still accommodative monetary policies.** Despite the recent volatility, global equity markets remain buoyant. The Federal Funds futures curve shifted upwards following the rate hike at the Federal Open Market Committee's March meeting.

Markets continue to anticipate a gradual tightening, pricing in three further rate increases in 2018. Market expectations also suggest a rise in UK rates in the coming months, following the hawkish tone of the Bank of England's February Inflation Report. By contrast, the Bank of Japan maintains a very accommodative stance, holding ten-year yields close to zero in line with its yield curve control programme. Financial conditions in emerging market economies also remain accommodative, benefiting from a sustained improvement in capital inflows over the past year. Bond spreads rose following the US Administration's announcement on tariffs but remain low by historical standards. At the same time, conditions continue to improve in large commodity exporters, with both Brazil and Russia lowering policy interest rates further in March, as inflationary pressures remain subdued. China, however, continues to tighten domestic financial conditions to tackle risks in the financial system, raising its open-market interest rates again in March.

**Global trade indicators were mixed but signal, overall, some deceleration at the start of the year.** While the volume of merchandise imports increased by 2.2% in February 2018 (in three-month-on-three-month terms) – unchanged from the previous month – on account of sharp increases in Asian countries, trade indicators such as the PMI new export orders fell throughout the first quarter (see Chart 2). A broader measure, based on a principal component of leading indicators of global trade, also points to some moderation in the first quarter of 2018, compared with the previous quarter.

**Chart 2**
Global trade and surveys




Sources: Markit, CPB Netherlands Bureau for Economic Policy Analysis and ECB staff calculations.
Note: The latest observations are for February 2018 for global merchandise imports and March 2018 for the PMIs.

**Global inflation remained stable in February.** Annual consumer price inflation in the countries of the Organisation for Economic Co-operation and Development (OECD) stood at 2.2% in February, broadly in line with the average recorded in the second half of 2017. Excluding food and energy prices, OECD annual inflation edged up marginally to 1.9%. Looking ahead, inflation is expected to increase in the short-term following the recent pick-up in oil prices. Later, the slowly diminishing spare capacity at the global level is also expected to support underlying inflation.

**Oil prices picked up in mid-March on account of increased geopolitical risks.** By mid-April, Brent crude oil prices had risen above USD 73, a level last seen at the end of November 2014. Oil prices are supported by renewed geopolitical tensions concerning the US-Iran relationship, as well as by expectations of an extension of supply cuts by OPEC and non-OPEC countries, although in March a decrease in production arising from those cuts was partially compensated for by a surge in production in the United States. The market rebalancing sought by these cuts is almost completed, as inventories have almost returned to their five-year average – the reference point underlying the OPEC/non-OPEC agreement on production cuts. Oil demand remains strong, in line with the global business cycle. Non-oil commodity prices have decreased by around 0.8% in US dollar terms since early March. This decline has been driven largely by a fall in the price of iron ore, due to a moderation in Chinese metal imports, and to a lesser extent by a decline in food prices on the back of ample supplies. Aluminium, on the other hand, hit a seven-year high, on the back of concerns over protectionist measures implemented in the United States and of a shutdown in Brazilian production due to an environmental accident.

**The outlook for economic activity in the United States remains strong.** Real GDP expanded at an annualised rate of 2.9% in the fourth quarter of 2017. Despite the slight deceleration in activity compared with the previous quarter, both consumer spending and business investment increased strongly, although this was partially offset by negative contributions from inventories and net exports. Going forward, the large fiscal expansion, solid labour market conditions and robust foreign demand should continue to support the outlook. In particular, conditions in the labour market remained tight in the first quarter of the year, with the unemployment rate unchanged at 4.1% in March, the labour force participation rate rising to 63% and the annual growth in average hourly earnings standing at 2.7%. In March, annual headline consumer price index (CPI) inflation rose to 2.4%, while, excluding food and energy, inflation increased to 2.1%. Base effects stemming from a considerable fall in mobile phone services prices last year pushed the annual figures significantly higher.

**Economic growth moderated in Japan, amid low wage and price pressures.** Real GDP increased by 0.4% quarter on quarter in the fourth quarter of 2017, mainly supported by domestic demand. However, contracting industrial production and slowing net exports, together with temporary factors such as unfavourable weather conditions, point to a deceleration in the pace of economic activity in the first quarter of 2018. The labour market remains tight, despite some recent easing in indicators. However, total nominal wages continued to increase moderately. Headline CPI inflation declined to 1.1% in February year on year. At the same time, annual growth in the CPI excluding fresh food and energy – the Bank of Japan's preferred measure of core inflation – remained stable at 0.5%.

**In the United Kingdom, GDP growth slowed slightly during 2017 owing largely to weak private consumption, as inflation rose sharply.** Real GDP increased by 0.4% quarter on quarter in the last quarter of 2017, slowing from the previous quarter. Consumption was particularly hard hit, as household spending was constrained in an environment of rising prices and low wage growth. Recent indicators suggest that GDP is likely to remain at more muted rates of growth over

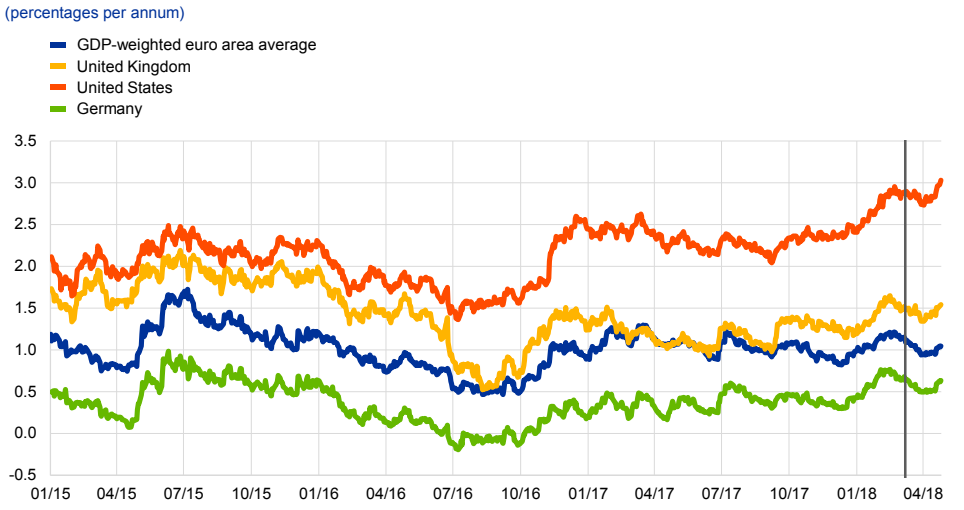
the coming quarters than seen before the referendum on EU membership. This is in line with an environment of heightened uncertainty, particularly regarding the outcome of the negotiations with the European Union on the country's withdrawal in March 2019. At the same time, inflation rose strongly in 2017, peaking at 3.0% in the last quarter, mainly as a result of the pass-through to prices from the marked depreciation in the pound sterling following the referendum. The latest indications are that inflation has now peaked, with annual CPI inflation falling to 2.7% in the first quarter of 2018, following a strong decline in March.

**Economic growth in the Chinese economy remains robust.** Real GDP grew at 6.8%, in year-on-year terms, in the first quarter of 2018, unchanged from the previous quarter. Growth was driven by both consumption and investment, while the contribution of net trade turned negative. However, overall, momentum in the first quarter of 2018 was weaker than in the last quarter of 2017, consistent with a pattern of weak outcomes in China in the first quarter in recent years. Annual CPI inflation eased to 2.1% in March, from 2.9% in February, as food and non-food prices weakened after the Chinese New Year. Inflation excluding food and energy also slowed to 2.0% in March, from 2.5% in the previous month. At the same time, annual producer price inflation fell to 3.1% in March, as raw material and energy price increases slowed further.

# 2 Financial developments

**Euro area government bond yields have fallen since early March (see Chart 3).** In the period under review (from 8 March to 25 April 2018), the GDP-weighted euro area ten-year sovereign bond yield decreased by 6 basis points, to 1.03%. Despite an interim decline, the German ten-year bond yield now stands unchanged at 0.63%. The initial declines in euro area sovereign rates reflected a softening in euro area macroeconomic data, relative to comparatively high expectations, and also some global spillovers from an intensification of trade disputes and geopolitical tensions. In contrast, vis-à-vis the rate on German ten-year bonds, the yield spreads on Portuguese, Italian and Spanish sovereign bonds continued their downward trajectory amid improvements in country-specific macroeconomic fundamentals in the light of the ongoing economic expansion. In the United Kingdom and the United States, sovereign bond yields increased to 1.54% and 3.03% respectively.

**Chart 3**
Ten-year sovereign bond yields




Sources: Thomson Reuters and ECB calculations.
Notes: Daily data. The vertical grey line denotes the start of the review period (8 March 2018). The latest observation is for 25 April 2018.

**Yield spreads on bonds issued by non-financial corporations (NFCs) increased slightly during the period under review.** Since early March, the spread on investment-grade NFC bonds relative to the risk-free rate increased slightly, by 10 basis points, to stand at 44 basis points. Spreads on financial sector debt with an investment-grade rating also increased by around 10 basis points. The increase in spreads is unlikely to reflect any significant increase in credit risk, the low levels of which remain consistent with a strengthening of the economic expansion. In addition, corporate bond spreads remain significantly (60-80 basis points) below the levels observed in March 2016, prior to the announcement and subsequent launch of the corporate sector purchase programme.

**Broad indices of euro area equity prices rose slightly over the review period despite some heightened volatility.** Equity prices of euro area financials and NFCs increased by around 1%. Overall, expectations of solid growth in corporate profits

continue to support euro area equity prices, reflecting the broad-based improvement in the euro area's macroeconomic environment. The equity prices of US financials and NFCs fell over the review period, by 3.5% and 3.7% respectively. Both euro area and US equity prices fluctuated in response to announcements concerning the future path of global trade policy, leading to some temporary episodes of heightened volatility. However, market expectations of future equity price volatility have remained broadly unchanged in the two jurisdictions, where they are still quoted on an annualised basis at levels (14.7% and 17.8% respectively) that are comparatively low from a historical perspective.

**The euro overnight index average (EONIA) averaged -36.5 basis points over the period under review.** Excess liquidity declined by about €22 billion to around €1,864 billion, as the liquidity-absorbing impact of an increase in net autonomous factors more than offset the provision of liquidity through ongoing purchases under the Eurosystem's asset purchase programme.

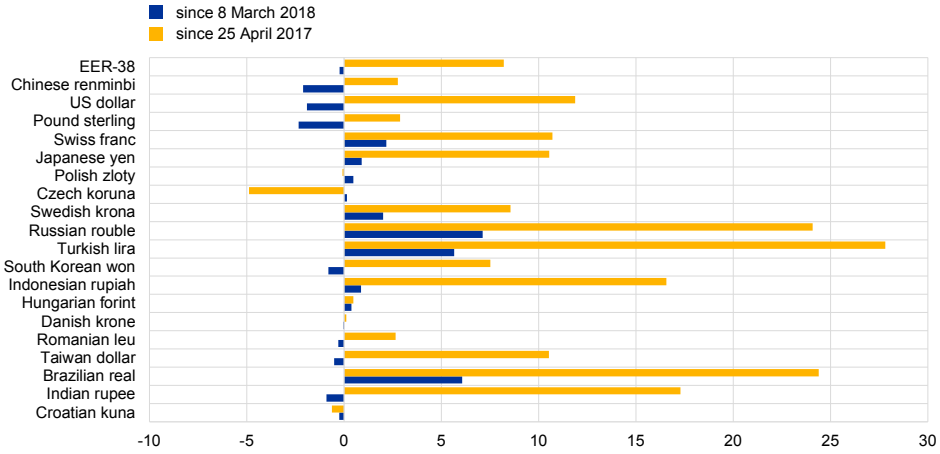
**The EONIA forward curve shifted downwards over the review period, in particular for medium-term horizons.** Market sentiment regarding the course of monetary policy in the remainder of 2018 remained unchanged. Beyond that horizon, market participants revised down their interest rate expectations. The curve remains below zero for horizons prior to December 2019.

**In foreign exchange markets, the euro remained broadly unchanged in trade-weighted terms (see Chart 4).** Over the period under review, the effective exchange rate of the euro, measured against the currencies of 38 of the euro area's most important trading partners, depreciated by -0.2%. In bilateral terms, the euro depreciated against the US dollar (by 1.9%), the Chinese renminbi (by 2.1%) and the pound sterling (by 2.3%). These developments were partly offset by a strengthening of the euro against other major currencies, including the Japanese yen (by 0.9%) and the Swiss franc (by 2.2%), as well as against the currencies of some emerging markets, most notably the Russian rouble (by 7.2%), the Brazilian real (by 6.1%) and the Turkish lira (by 5.2%).

## Chart 4

Changes in the exchange rate of the euro vis-à-vis selected currencies

(percentage changes)




Source: ECB.
Notes: "EER-38" is the nominal effective exchange rate of the euro against the currencies of 38 of the euro area's most important trading partners. All changes have been calculated using the foreign exchange rates prevailing on 20 April 2018.

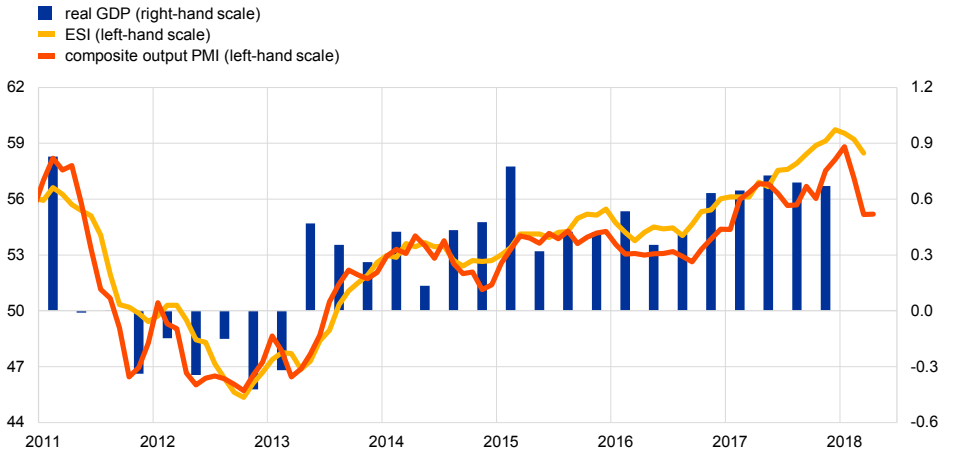
# 3 Economic activity

**The solid and broad-based growth pattern in the euro area is continuing, although incoming data have overall been weaker than expected in the first quarter of this year.** Real GDP increased by 0.7%, quarter on quarter, in the last quarter of 2017, following similar growth in the two previous quarters (see Chart 5). Domestic demand and net trade provided positive contributions to this outcome, whereas changes in inventories had a small dampening impact on GDP growth in the fourth quarter. Although economic indicators, particularly survey results, still remain at very high levels, they have recently eased. This suggests some moderation in the growth momentum in the first quarter of the year. In annual terms, GDP rose by 2.4% in 2017, which is the highest growth rate since 2007. The implications of the recent robust growth for economic slack are discussed in more detail in Box 3.

**Chart 5**

Euro area real GDP, Economic Sentiment Indicator and composite output Purchasing Managers' Index

(left-hand scale: diffusion index; right-hand scale: quarter-on-quarter percentage growth)



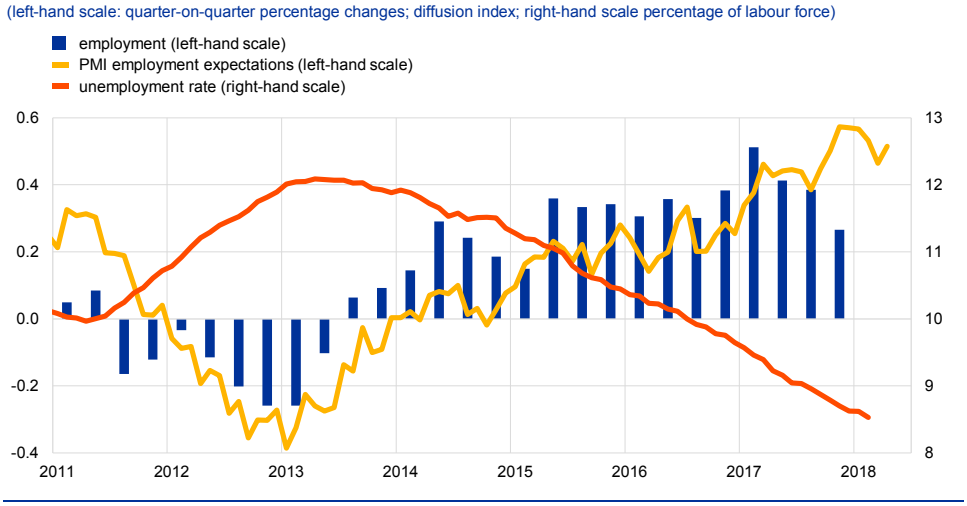

Sources: Eurostat, European Commission, Markit and ECB.
Notes: The Economic Sentiment Indicator (ESI) is standardised and rescaled to have the same mean and standard deviation as the Purchasing Managers' Index (PMI). The latest observations are for the fourth quarter of 2017 for real GDP, March 2018 for the ESI and April 2018 for the PMI.

**Consumer spending has continued to rise, albeit at slightly slower growth rates than in earlier quarters.** Private consumption rose by 0.2%, quarter on quarter, in the final quarter of 2017, following a somewhat higher rate of increase in the third quarter. This slowdown seems to reflect lower consumption growth of services, whereas goods consumption appears to have risen at a higher rate than in the third quarter. On an annual basis, consumption rose by 1.5% in the fourth quarter of 2017, which represents a clear decline from the third quarter when consumption rose by 1.9%. This pattern is in line with the small decline in the annual growth of households' real disposable income from 1.5% to 1.4% between the same quarters. As a consequence, the annual rate of change in savings increased strongly between the third and fourth quarters, thus contributing to the lower growth in consumer spending. However, the saving ratio (expressed as a four-quarter moving average) remained unchanged at a record low level of 11.9% in the fourth quarter of last year.

**Euro area labour markets continue to improve, thus underpinning household income and consumer spending.** Employment rose further, by 0.3% quarter on quarter in the fourth quarter of 2017, which led to an annual increase of 1.6%. Employment currently stands 1.5% above its pre-crisis peak in the first quarter of 2008. The unemployment rate in the euro area stood at 8.5% in February 2018, down from 8.6% in January and 3.6 percentage points below the post-crisis peak in April 2013 (see Chart 6). This decline has been broad-based across age and gender groups. Long-term unemployment (i.e. the number of people who have been unemployed for at least 12 months expressed as a percentage of the labour force) also continues to decline, but remains above its pre-crisis level. Survey information points to continued growth in employment in the period ahead, and in some countries and sectors there are increasing signs of labour shortages.

**Chart 6**

Euro area employment, Purchasing Managers' Index employment expectations, and unemployment




Sources: Eurostat, Markit and ECB calculations.
Notes: The Purchasing Managers' Index (PMI) is expressed as a deviation from 50 divided by 10. The latest observations are for the fourth quarter of 2017 for employment, April 2018 for the PMI and February 2018 for the unemployment rate.

**Barring any short-term volatility, private consumption is expected to continue to increase at robust rates.** Recent data on retail trade and new passenger car registrations point to continued, albeit relatively slow, growth in consumer spending in the first quarter of this year. However, other indicators support the picture of continued strong consumption dynamics. The latest survey results signal ongoing labour market improvements, which should – via employment gains – continue to support aggregate income and thus consumer spending. Moreover, households' net worth continued to increase at robust rates in the fourth quarter of 2017, thus lending further support to private consumption. These factors may partly explain why consumer confidence continues to stand at elevated levels close to its all-time high reached in May 2000.

**Following a weak third quarter, business investment picked up in the fourth quarter of 2017.** Recent volatility in investment growth is largely technical in nature. The volatility relates mainly to the introduction of Irish data into the euro area

national accounts and the associated impact from investment in intellectual property products and leasing-related aircraft purchases. The quarterly rise in investment in the fourth quarter, of 1.2%, was brought about by developments in both non-construction and, to a lesser extent, construction investment. Growth in non-construction investment, of 1.5%, reflected in turn chiefly investment in machinery and transport equipment. As regards the first quarter of 2018, short-term indicators point to a weakening in growth. For instance, monthly data on capital goods production stood on average in January and February 1.5% below the average level in the fourth quarter, when they rose by 2.4% on a quarterly basis. However, continued favourable conditions in the capital goods sector, such as increasing capacity utilisation and rising orders, as well as stronger confidence and demand, signal overall a continuation of the dynamic investment momentum. With regard to construction investment, monthly construction production data until February point to slightly slower growth in the first quarter of 2018 compared with the final quarter of 2017. At the same time, survey indicators on confidence in the construction sector, as well as the number of building permits issued, are in line with positive growth momentum at the beginning of the year. In some countries, however, there are growing indications of capacity constraints in construction due to labour shortages.

**Investment is expected to continue to grow at a robust pace.** Investment should continue to be supported by increasing supply constraints, favourable earnings expectations, strong domestic and foreign demand, and accommodative financing conditions. According to the euro area sectoral accounts for the fourth quarter of 2017, business margins (measured as the ratio of net operating surplus to value added) remained close to the highest level since early 2009. Furthermore, earnings expectations for listed companies in the euro area continue to register high levels. At the same time uncertainties surrounding the implementation of tariff increases may already be detrimental to investment decisions. As regards construction investment, the latest indicators point to a decelerating but still positive momentum in construction and housing investment. Households' rising disposable income and very favourable lending conditions continue to underpin demand in the construction sector.

**Euro area exports continued to grow in the last quarter of 2017.** Euro area total real exports confirmed the positive dynamic of the second half of 2017, increasing by 1.9% quarter on quarter. Goods exports, in particular those directed to countries outside the European Union, made a major contribution to the increase. However, for the first quarter of 2018 monthly data suggest some softening of the past export growth, as total nominal exports in goods for January and February decreased respectively by 0.7% and 2.0% month on month, even though they continue to rise robustly on a year-on-year basis. Survey indicators for global and euro area new manufacturing orders also confirm a more moderate export trend for the coming quarter.

**The latest economic indicators suggest some moderation in the pace of growth since the start of the year.** Industrial production (excluding construction) displayed declines in January and February. As a result, production stood on

average in these months 0.5% below the level in the fourth quarter of 2017, when it rose by 1.4% on a quarterly basis. More timely survey data signal some slowdown in growth dynamics in the near term. The composite output Purchasing Managers' Index (PMI) averaged 57.0 in the first quarter of 2018, compared with 57.2 in the fourth quarter, before remaining unchanged between March and April 2018, at 55.2. Meanwhile, the European Commission's Economic Sentiment Indicator (ESI) eased to 113.9 in the first quarter from 114.3 in the fourth quarter (see Chart 5). Both the ESI and the PMI continue to stand well above their respective long-term averages.

**This moderation may in part reflect a pull-back from the high pace of growth observed at the end of last year, while temporary factors may also be at work.** Overall, however, growth is expected to remain solid and broad-based. The ECB's monetary policy measures, which have facilitated the deleveraging process, should continue to underpin domestic demand. Private consumption is supported by ongoing employment gains (which, in turn, partly reflect past labour market reforms) and by growing household wealth. Business investment continues to strengthen on the back of very favourable financing conditions, rising corporate profitability and solid demand. Housing investment continues to improve. In addition, the broad-based global expansion is providing impetus to euro area exports. The results of the latest round of the ECB Survey of Professional Forecasters, conducted in early April, show that private sector GDP growth forecasts were revised upwards for 2018 and 2019 in comparison with the previous round conducted in early January. At the same time, the figure for 2020 was slightly revised down.

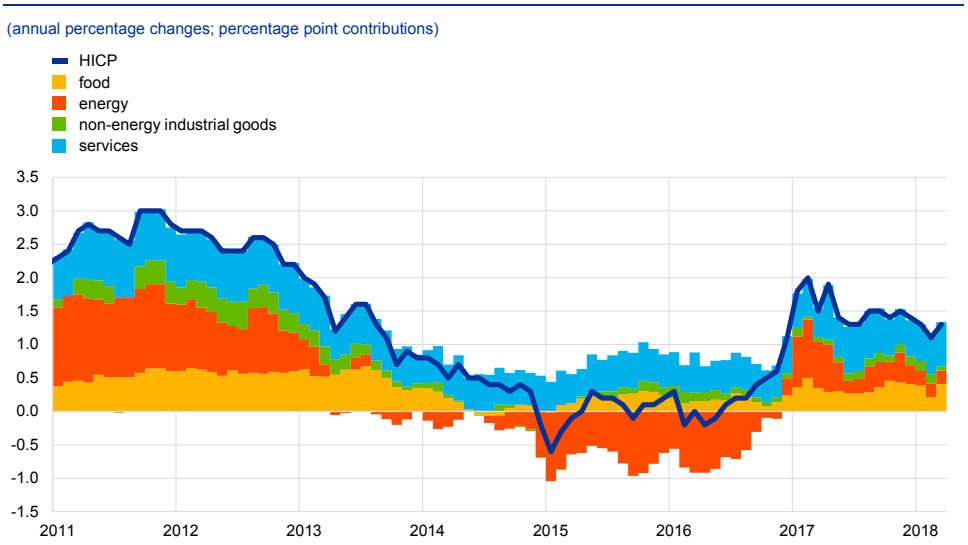
**The risks surrounding the euro area growth outlook remain broadly balanced.** However, risks related to global factors, including the threat of increased protectionism, have become more prominent.

# 4 Prices and costs

**Headline HICP inflation was 1.3% in March 2018, up from 1.1% in February (see Chart 7).** The increase reflected mainly higher food price inflation. HICP inflation excluding energy and food was 1.0% in March, unchanged from February.

**Chart 7**

Contributions of components of euro area headline HICP inflation




Sources: Eurostat and ECB calculations.
Note: The latest observations are for March 2018.

**Measures of underlying inflation have generally remained subdued, in part owing to special factors.** HICP inflation excluding energy and food stood at 1.0% for the three consecutive months to March. This followed some previous moderation, which partly reflected the impact of large declines in inflation for a number of services items. In recent months, developments in inflation in the volatile sub-components of (i) clothing and footwear and (ii) travel-related items have offset each other so that the inflation rate remains broadly stable when these sub-components are excluded from HICP inflation excluding energy and food. Overall, measures of underlying inflation have yet to show convincing signs of a sustained upward trend.

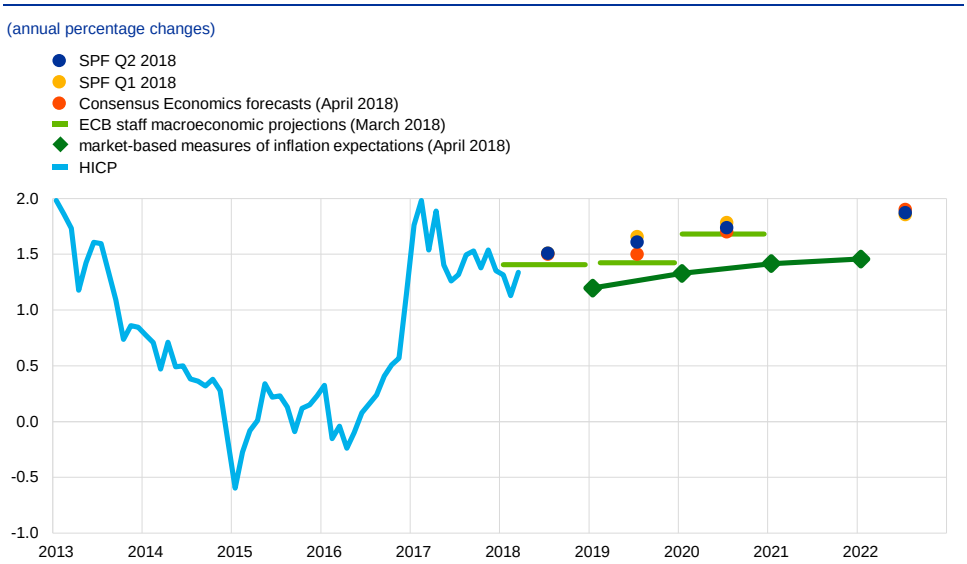
**Price pressures for non-energy industrial goods inflation have weakened further at the early stage of the pricing chain and remain subdued overall.** The impact of the appreciation of the euro exchange rate is evident in the declining inflation rates for imported final non-energy industrial goods – which account for approximately 12% of final non-energy goods consumption – as well as in the declining inflation rates for intermediate goods. However, further along the pricing chain, annual producer price inflation for non-food consumer goods increased to its highest level since February 2013 – up to 0.5% in February 2018, from 0.4% in the previous month. Also, at the consumer level, HICP non-energy industrial goods inflation rose gradually from 0.4% in November to 0.6% in January and February, before declining to 0.2% in March. This pattern reflected strong volatility in the annual rates of inflation for the clothing and footwear sub-component, which has been partly due to changing seasonal sales patterns in recent years.

**Recent wage growth data points to a continued upward shift from a trough in the second quarter of 2016.** Annual growth in compensation per employee was 1.8% in the fourth quarter of 2017, up from 1.6% in the previous quarter, although still below its long-term average of 2.1%. More recently, annual growth in negotiated wages also increased further to 1.7% in January 2018, from 1.6% in December. While recent developments in wage growth are in line with improving labour market conditions, they may still be weighed down by factors such as previous low inflation rates, weak productivity growth and the ongoing impact of labour market reforms implemented in some countries during the crisis.

**Both market and survey-based measures of long-term inflation expectations remain broadly unchanged (see Chart 8).** On 25 April 2018, the five-year inflation-linked swap rate five years ahead stood at 1.71%. The forward profile of market-based measures of inflation expectations continues to signal a gradual return to inflation levels below, but close to, 2%. These market-based measures continue to suggest that deflation risk remains well contained. According to the ECB Survey of Professional Forecasters for the second quarter of 2018, longer-term inflation expectations for the euro area remained stable at 1.9%.

**Chart 8**

Market and survey-based measures of inflation expectations




Sources: ECB Survey of Professional Forecasters (SPF), Thomson Reuters, Consensus Economics, ECB staff macroeconomic projections and ECB calculations.
Notes: Realised HICP data are included up to March 2018. The market-based measures of inflation expectations are derived from HICPx (euro area HICP excluding tobacco) zero coupon inflation-linked swaps. The latest observations are for 25 April 2018.

**Residential property prices in the euro area continued to accelerate in the fourth quarter of 2017.** According to the ECB's residential property price indicator, the prices of houses and flats in the euro area increased by 4.6% year on year in the fourth quarter of last year, up from 4.2% in the previous quarter, confirming a further strengthening and broadening of the house price cycle.

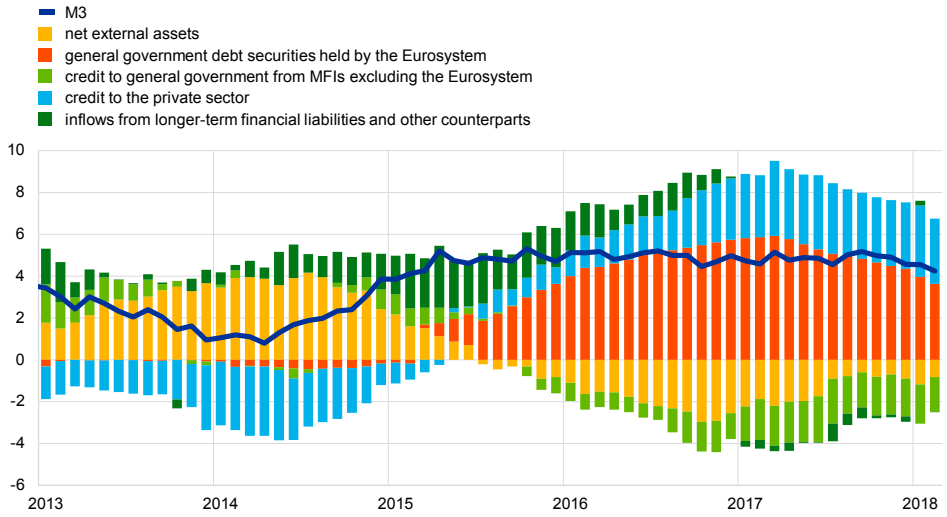
# 5 Money and credit

**Broad money growth moderated, but remained at a robust level.** The annual growth rate of M3 declined to 4.2% in February 2018 and was slightly below the narrow range observed since mid-2015 (see Chart 9). The most liquid components remained the main contributors to broad money growth: the annual growth rate of M1 continued to be strong, though moderating to 8.4% in February (compared with 8.8% in January). In this respect, the low opportunity cost of holding liquid deposits in an environment of very low interest rates and the impact of the ECB's monetary policy measures again lent support to M3 growth.

**Chart 9**

M3 and its counterparts

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




Source: ECB.
Notes: Credit to the private sector includes monetary financial institution (MFI) loans to the private sector and MFI holdings of securities issued by the euro area private non-MFI sector. It thus includes the Eurosystem's holdings of debt securities in the context of the corporate sector purchase programme (CSPP). The latest observation is for February 2018.

**Domestic counterparts of M3 remained the main driver of broad money growth (see Chart 9).** From a counterpart perspective, the decline in M3 annual growth observed in February 2018 can be explained by a slight decrease in the contribution of credit to the private sector, mainly owing to a decline in the flow of MFI loans to NFCs. In addition, the contribution from purchases under the asset purchase programme (APP) has become smaller as a result of the reduction in net purchases by the Eurosystem from €60 billion to €30 billion per month as of January 2018. The Eurosystem's purchases of government bonds (see the red parts of the bars in Chart 9), conducted mainly in the context of the public sector purchase programme (PSPP), continued to have a positive effect on M3 growth. The ongoing recovery in credit to the private sector (see the blue parts of the bars in Chart 9) also continued to support M3 growth. This includes both MFI loans to the private sector and MFI holdings of securities issued by the euro area private non-MFI sector. As such, it also covers the Eurosystem's purchases of non-MFI debt securities under the CSPP. The persistent contraction in MFIs' longer-term financial liabilities (excluding capital and reserves) again made a positive contribution to M3 growth (included alongside other

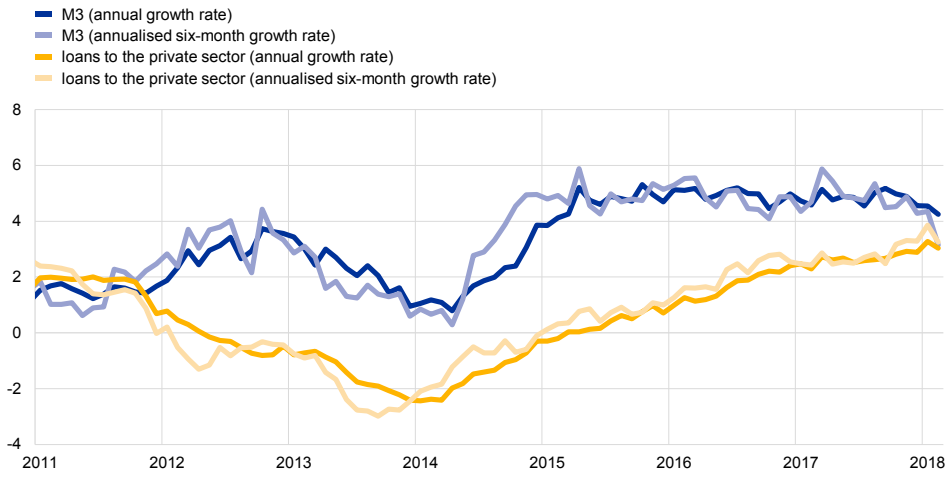
counterparts in the dark green parts of the bars in Chart 9). Government bond sales from euro area MFIs excluding the Eurosystem contributed to the negative annual growth of credit to general government from MFIs excluding the Eurosystem and thus dampened M3 growth (see the light green parts of the bars in Chart 9). Finally, MFIs' net external assets continued to weigh on annual M3 growth (see the yellow parts of the bars in Chart 9).

**The gradual recovery in loan growth is progressing, despite some moderation in the growth rate of loans to NFCs in February 2018.** The annual growth rate of MFI loans to the private sector (adjusted for loan sales, securitisation and notional cash pooling) declined to 3.0% in February (see Chart 10). Across sectors, the annual growth rate of loans to NFCs decreased to 3.1% in February (from 3.4% in January 2018 and 3.1% in December 2017). Meanwhile, the annual growth rate of loans to households remained unchanged at 2.9%. These trends have been supported by the significant decrease in bank lending rates seen across the euro area since mid-2014 (notably owing to the ECB's non-standard monetary policy measures) and overall improvements in the supply of, and demand for, bank loans. In addition, banks have made progress in consolidating their balance sheets, although the level of non-performing loans remains high in some countries and may constrain financial intermediation.[2]

**Chart 10**

M3 and loans to the private sector

(annual growth rate and annualised six-month growth rate)




Source: ECB.
Notes: Loans are adjusted for loan sales, securitisation and notional cash pooling. The latest observation is for February 2018.

**The April 2018 euro area bank lending survey suggests that loan growth continued to be supported by increasing loan demand across all categories, and a further easing of credit standards for loans to enterprises and households.** In the first quarter of 2018, credit standards for loans to enterprises eased considerably and those for loans to households for house purchase eased further. Competitive pressure and reduced risk perceptions related to the ongoing

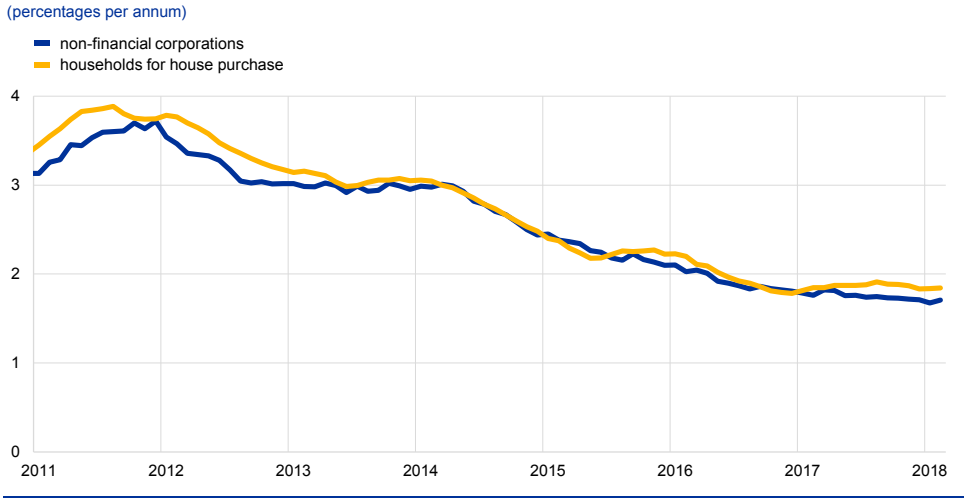
[2] See also Section 3 of the *Financial Stability Review*, ECB, November 2017.

solid economic outlook were important factors behind these developments. Banks also reported increasing net loan demand across all loan categories. Growth in fixed investment, merger and acquisition activity, the low general level of interest rates, consumer confidence and, to a lesser extent, favourable housing market prospects were significant drivers of loan demand. The ECB's expanded APP has had an easing impact on credit terms and conditions across all loan categories. The net easing impact was stronger for terms and conditions than for credit standards. Euro area banks reported that the APP has contributed to an improvement in their liquidity position and their market financing conditions, while it was negative for their profitability, owing to a squeezing of net interest rate margins. They have mainly used the liquidity obtained from the APP to grant loans. Furthermore, the ECB's negative deposit facility rate was said to be having a positive effect on lending volumes, while weighing on banks' net interest income.

**Bank lending rates for NFCs and households remained close to their historical lows.** In February 2018 the composite bank lending rate for loans to NFCs increased slightly from the historical low reached in January 2018 to stand at 1.71%. The composite bank lending rate for housing loans remained stable at 1.84% in February, which compares with the historical low of 1.78% reached in December 2016 (see Chart 11). Composite bank lending rates for loans to NFCs and households have decreased by more than market reference rates since the ECB's credit easing measures were announced in June 2014. Between May 2014 and February 2018, composite lending rates for loans to NFCs and households fell by 123 and 107 basis points, respectively. The reduction in bank lending rates on loans to NFCs was particularly strong in the euro area countries that were most exposed to the financial crisis, indicating a more homogeneous transmission of monetary policy to such rates across the euro area. Over the same period, the spread between interest rates charged on very small loans (loans of up to €0.25 million) and on large loans (loans of above €1 million) in the euro area narrowed substantially. This indicates that small and medium-sized enterprises have generally benefitted to a greater extent from the decline in bank lending rates than large companies.

**Chart 11**

Composite bank lending rates for NFCs and households




Source: ECB.
Notes: Composite bank lending rates are calculated by aggregating short and long-term rates using a 24-month moving average of new business volumes. The latest observation is for February 2018.

**Net issuance of debt securities by euro area NFCs is estimated to have increased in the first quarter of 2018.** The latest ECB data indicate that, on a net basis, the total flow of debt securities issued by NFCs in January and February 2018 increased sizeably compared to the fourth quarter of 2017. Furthermore, according to market data, debt securities issuance activity accelerated even further in March and April this year. Net issuance of listed shares by NFCs remains positive and even increased at the beginning of 2018 compared to the fourth quarter of 2017.

**Financing costs for euro area NFCs increased slightly in the first quarter of 2018, but remained favourable.** The overall nominal cost of external financing for NFCs, comprising bank lending, debt issuance in the market and equity finance, is estimated to have increased slightly to around 4.6% in the first quarter of 2018, which is 20 basis points above the level recorded in December 2017. In April the overall nominal cost of financing is estimated to have declined somewhat. The cost of financing now stands some 46 basis points above the historical low of July 2016, but it is still considerably below the levels observed in summer 2014 and in line with the ECB's monetary policy stance. Recent developments in the overall nominal cost of financing reflect increases in the cost of equity as well as in the cost of debt, expressed as the weighted average of the cost of bank lending and the cost of market-based debt. The increase in the cost of equity reflects a higher equity risk premium, while the increase in the cost of debt is entirely attributable to the cost of market-based debt. The estimated slight decline in April 2018 reflects some moderation in the equity risk premium compared to its level in the first quarter of 2018.

# Boxes

## 1 Implications of rising trade tensions for the global economy

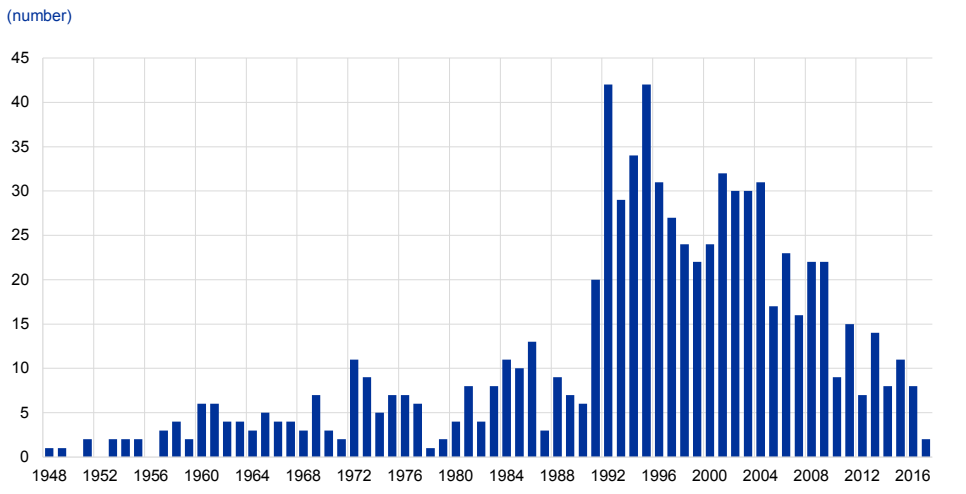
**Prepared by Lucia Quaglietti**

**Public support for globalisation has declined over the past decade and trade reforms have slowed. Moreover, in recent weeks the risk of rising trade tensions has surged on the back of new sets of tariffs announced by the US administration.** This box discusses the possible implications of rising trade tensions for the global economy.

**The period prior to the financial crisis was characterised by a sharp increase in trade liberalisation.** In the period between 1990 and 2010 more than 500 new preferential agreements were signed cumulatively (see Chart A) – three times more than in the previous two decades. The proliferation, which was in part favoured by the standstill of the Doha trade round as countries resorted to alternative forms of trade liberalisation,[3] led to a sharp and widespread fall in applied tariff rates among both advanced and emerging economies (see Chart B).

**Chart A**

Preferential trade agreements by year of signature

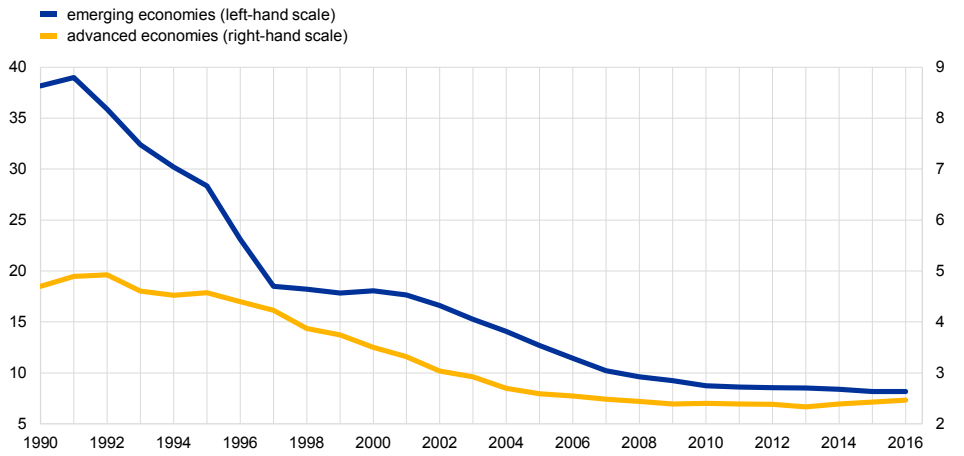



Source: Design of Trade Agreements Database.

[3] See, for example, Bhagwati, J. and Krueger, A., "The Dangerous Drift to Preferential Trade Agreements", American Enterprise Institute, Washington, 1995.

**Chart B**

Average tariffs in advanced economies and emerging market economies




Source: World Bank.
Notes: The simple mean of weighted tariff rates is shown. For each individual country, this is computed as the unweighted average of effectively applied tariff rates for all traded goods subject to tariffs. Aggregates are based on the 14 largest countries in the world (according to purchasing power parity GDP weights in 2010).

**Increasing trade openness contributed to the increase in global living standards.** Cross-country evidence[4] indicates that a one percentage point increase in trade openness tends to raise real per capita income by 3 to 5% in the long run, though a smaller effect is detected in the years following the financial crisis. In addition, the integration of many emerging economies into global trade, including through participation in global value chains, has been identified as an important driver of poverty reduction.[5]

**The overall pace of trade liberalisation has slowed down in recent years, while policy actions restricting trade have increased.** The number of newly signed free trade agreements has dropped sharply over the last decade (see Chart A), although recent agreements have broader coverage regarding both the number of countries involved and the sectors targeted.[6] At the same time, the decline in tariff rates observed in the years preceding the crisis has come to a standstill (see Chart B). In addition, according to data from the Global Trade Alert Database encompassing traditional and non-traditional trade measures, the number of new discriminatory actions announced by G20 economies has increased steadily since 2012 (see Chart C[7]). Within these, anti-dumping measures and import tariffs were the two most predominant instruments used, accounting together for around 30% of all measures imposed in 2017. At the same time, non-tariff measures, such as state loans to exporting companies, have surged. Moreover, the evidence suggests that over the

4 Cerdeiro, D. and Komaromi, A., "Trade and Income in the Long Run: Are There Really Gains, and Are They Widely Shared?", IMF Working Paper 17/231, International Monetary Fund, 2017. This analysis is based on reduced-form estimations and covers the period 1990-2015.

5 *The role of trade in ending poverty*, World Bank and World Trade Organization, 2015.

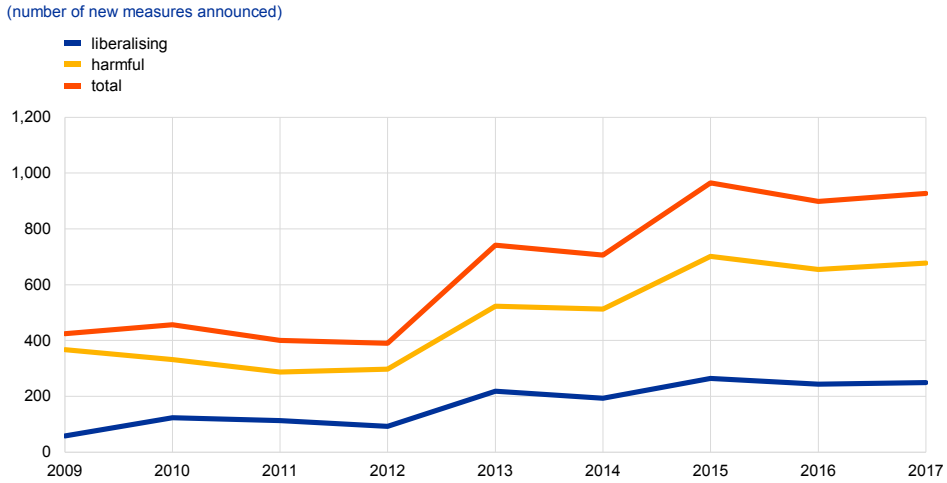
6 *World Economic Outlook*, International Monetary Fund, October 2016.

7 The author would like to thank Simon Evenett and Piotr Lukaszuk for sharing the data shown in Chart C.

period 2012-15, import growth in the sectors subject to large discriminatory trade measures recorded a sharper slowdown relative to sectors where no or only a few discriminatory measures were imposed.[8]

**Chart C**

New trade measures announced by G20 countries




Source: Global Trade Alert Database.
Notes: Data have been adjusted for reporting lags. The cut-off date in each year is 31 December.

**Previous ECB analysis suggests that the slowdown in trade reforms might have been one factor weighing on trade growth in recent years.**[9] Between 2012 and 2016 world imports expanded at an average pace of 3% per year – less than half the average of the previous two decades. The same weakness was not reflected in economic activity, which, while subdued, did not decelerate to the same extent. Having expanded at twice the rate of global GDP in the years before the global financial crisis, from 2012 the income elasticity of trade fell to around one.

**Over the past one and a half years, however, global trade has staged a cyclical revival.** World imports expanded by more than 5% in 2017, 1.5 percentage points higher than the 2011-16 average. In 2017 world imports outpaced economic activity for the first time in three years. The cyclical upswing in activity, particularly in investment, appears to have contributed to the recent pick-up in world trade. Global investment bottomed out from very low levels at the start of 2016 and in recent quarters it has been expanding at a rate close to its pre-crisis average.

**In recent weeks the risk of a worsening of trade tensions has increased on the back of new sets of tariffs announced by the US administration.** In late March President Trump signed an order to impose tariffs of 25% on steel and 10% on aluminium for imports, although exemptions were granted to several economies (including the EU, albeit on a temporary basis). China has responded with a pledge to increase tariffs on USD 3 billion of US imports. A further announcement by the US

8 *World Economic Outlook*, International Monetary Fund, October 2016.

9 See, for example, "Understanding the weakness in global trade: what is the new normal?", *Occasional Paper Series*, No 178, ECB, September 2016.

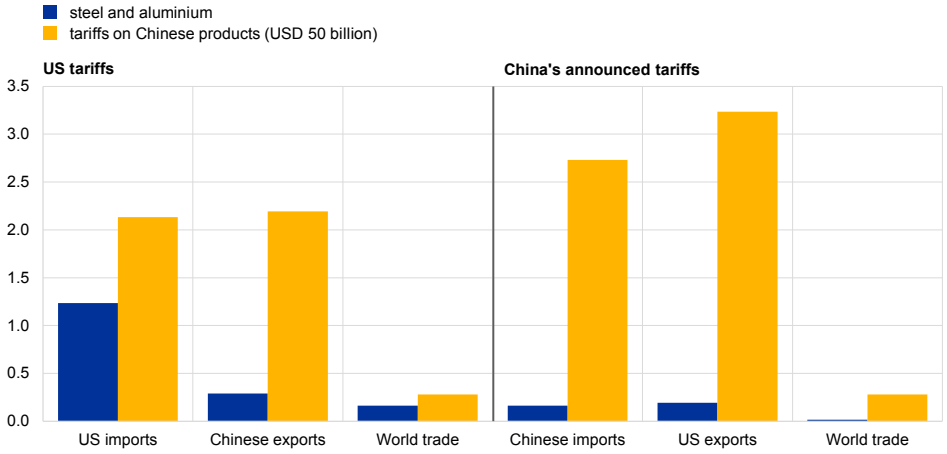
administration to raise tariffs on USD 50 billion of Chinese goods was met by a pledge by China to raise tariffs on a similar amount of imports from the United States.

**The announced tariffs affect only a small part of US trade or world trade, and their impact is likely to be modest.** The goods affected by the measures represent only around 2% of US imports and Chinese exports and less than ½% of world trade (see Chart D). Viewed in isolation, the direct impact is unlikely to be very significant. However, the risks associated with an escalation of trade tensions and a broader reversal of globalisation have clearly increased. This may affect investment decisions around the world, testing the resilience of the global trade momentum.

**Chart D**

US tariffs and China's retaliation: shares of US, Chinese and global goods trade

(percentage of total goods trade for the United States, China and the world)




Sources: US Census, IMF Direction of Trade Statistics and ECB staff calculations.

**A significant escalation of trade tensions risks derailing the ongoing recovery in global trade and activity.** Simulations carried out by ECB staff indicate that in the event of a significant increase in protectionism, the impact on global trade and output could be material. In a scenario in which the US increases tariffs markedly on imported goods from all trading partners that retaliate symmetrically against it, the outcome for the world economy would be clearly negative; global trade and activity could fall relative to the baseline. In such a scenario, the impact could be particularly severe in the United States.[10] The precise impact on individual countries would primarily depend on their size, openness and trade intensity with the tariff-imposing country. Overall, countries with the closest trade relations with that country would be the most negatively affected, and participation in global value chains could further amplify these effects. Only a few open economies with little exposure to the tariff-imposing country may benefit from trade diversion effects, as they would gain competitiveness in third markets.

[10] A number of assumptions underlie the results. For example, it is assumed that the trade disputes last only two years and that additional revenues generated by tariff increases are used to lower deficits, rather than being used to support demand. In addition, monetary policy and exchange rates are assumed to react endogenously in all countries.

**The impact of an escalation of trade tensions could be felt via a number of channels.** In the case of a generalised global increase in tariffs, higher import prices could increase firms' production costs and reduce households' purchasing power, particularly if domestic and imported goods cannot be substituted for each other easily. This could affect consumption, investment and employment. Moreover, an escalation of trade tensions would fuel economic uncertainty, leading consumers to delay expenditure and businesses to postpone investment.[11] In response to higher uncertainty, financial investors could also reduce their exposure to equities, reduce credit supply and require a higher compensation for risk. Moreover, through close financial linkages, heightened uncertainty could spill over more broadly, adding to volatility in global financial markets. In the longer term, by hindering productivity growth, a shift towards a more protectionist regime could also negatively affect potential output growth.

[11] See, for example, Bloom, N., "The impact of uncertainty shocks", *Econometrica*, Vol. 77(3), 2009, pp. 623-685.

# 2 Factors driving the recent improvement in the euro area's international investment position

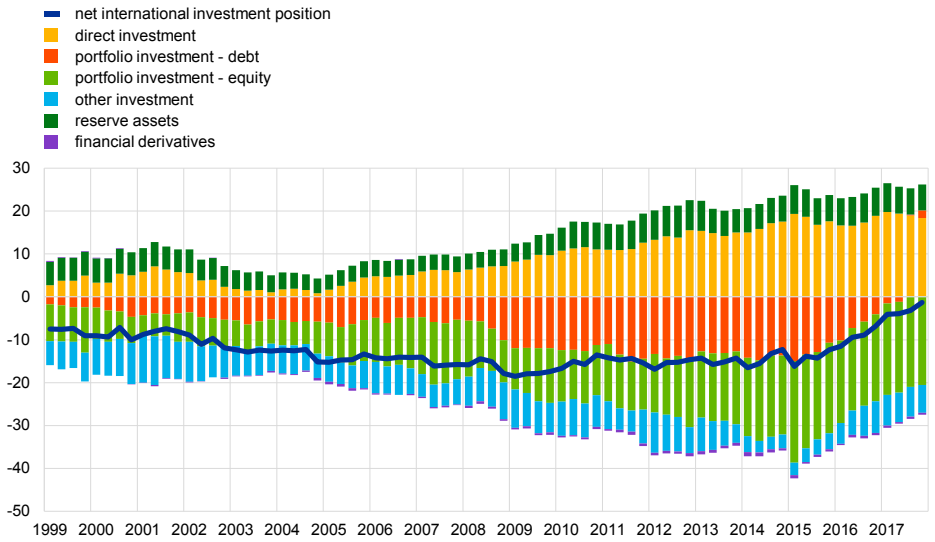
**Prepared by Michael Fidora and Martin Schmitz**

**The euro area's international investment position (i.i.p.) improved further in 2017 (see Chart A).** At the end of the year it showed net liabilities of 1.3% of euro area GDP – historically their lowest level. This followed a significant improvement of 15 percentage points of GDP which occurred since the first quarter of 2015, largely due to a reduction in net liabilities of portfolio debt securities. Before this recent improvement, the euro area's net i.i.p. had hovered around levels of -15% of GDP for more than a decade. Since 1999 the euro area has been a net creditor in direct investment and reserve assets, and a net debtor in portfolio equity investment, other investment and financial derivatives. It also recorded a net liability position in portfolio debt investment until 2015. This net liability position (of 15% of GDP in the first quarter of 2015) has since turned into a net asset position of 2% of GDP as at the end of 2017.

**Chart A**

Main components of the euro area's net international investment position

(outstanding amounts at end of period as a percentage of four-quarter moving sums of GDP)




Source: ECB.
Note: The latest observation is for the fourth quarter of 2017.

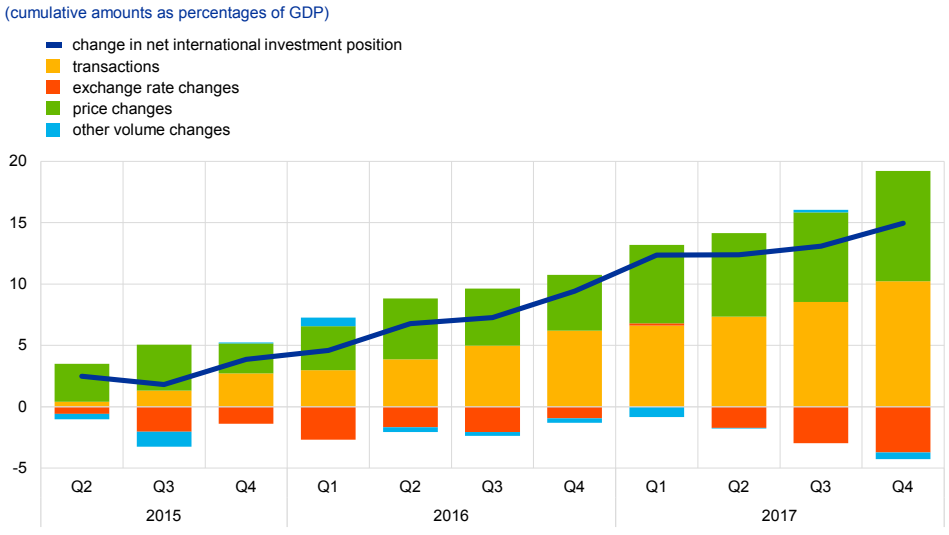
**The recent improvement in the euro area's net i.i.p. was mainly driven by net financial transactions – reflecting the euro area's current account surplus – and developments in asset prices (see Chart B).** Changes in the net i.i.p. can be broken down into net financial transactions (broadly mirroring developments in the current account balance), valuation effects due to changes in exchange rates and other asset prices, and other volume changes.[12] Since the first quarter of 2015, the

[12] "Other volume changes" include, for example, reclassifications, write-downs, "breaks" arising from changes in sources and methods, as well as changes in the residency of companies.

euro area's current account surplus contributed about 10 percentage points of GDP to the reduction in net external liabilities. From the financial account perspective this reflected, to a significant extent, net outflows in portfolio debt investment including those that occurred in the context of the public sector purchase programme (PSPP). At the same time, the contribution of asset prices (excluding exchange rate effects) to the reduction in net external liabilities was around 9 percentage points of GDP. This latter figure reflects the performance of euro area investments abroad relative to that of investments in euro area assets by non-euro area residents. Since the first quarter of 2015, two-thirds of these positive net valuation gains in the euro area's i.i.p. were accounted for by portfolio equity, as euro area investments in global stock markets outperformed foreign portfolio equity investments in the euro area. The remaining one-third of the net valuation gains was accounted for by portfolio debt investment. These positive contributions to developments in the euro area's net i.i.p. were only partly offset by net valuation losses arising from exchange rate movements (of around 4 percentage points of GDP) as the euro appreciated by 9% in nominal effective terms over the same period.[13]

**Chart B**

Breakdown of changes in the euro area's net international investment position since the first quarter of 2015




Sources: ECB and Eurostat.
Notes: "Other volume changes" include, for example, reclassifications, write-downs, "breaks" arising from changes in sources and methods and changes in the residency of companies. The latest observation is for the fourth quarter of 2017.

**As regards financial instruments, the improvement in the euro area's net i.i.p. was mainly due to a shift in portfolio debt securities from a net liability to a net asset position.** While portfolio debt securities recorded a net liability position of 15% of GDP in the first quarter of 2015, this changed to a net asset position of 2% of GDP by the end of 2017. Over the same period, the other components of the i.i.p.

[13] The euro area's net i.i.p. typically records valuation gains when the exchange rate of the euro depreciates (and valuation losses when it appreciates). This is because the euro area's foreign assets are mainly denominated in foreign currencies, whereas the largest share of the euro area's foreign liabilities is denominated in euro.

fluctuated much less, with net liabilities in portfolio equity shrinking by 3 percentage points of GDP and those in other investment increasing by 4 percentage points of GDP.[14]

**The shift to a net asset position in portfolio debt securities resulted from both a reduction in liabilities vis-à-vis non-euro area residents and – albeit to a lesser extent – an increase in euro area residents' holdings of non-euro area debt securities (see Chart C).** Specifically, the outstanding amount of euro area debt securities held by non-euro area residents declined from 55% of euro area GDP in the first quarter of 2015 to 42% of GDP at the end of 2017. At the same time, euro area residents increased their holdings of non-euro area debt securities from 40% of GDP to 44% of GDP.[15] On both the asset and liability sides these developments were driven almost exclusively by long-term debt securities, i.e. those with an original maturity exceeding one year.

**Non-euro area investors broadly reduced their holdings of euro area debt securities issued by all sectors; the largest reduction was in debt securities issued by euro area governments.** This reduction amounted to close to 8 percentage points of euro area GDP since the first quarter of 2015 and largely reflected net sales of euro area sovereign bonds by non-euro area residents, including those that occurred in the context of the Eurosystem's PSPP.[16] In the light of low interest rates in the euro area compared with other advanced economies, non-euro area residents also reduced their holdings of debt securities issued by euro area monetary financial institutions (MFIs) by 3 percentage points of GDP and reduced their holdings of debt securities issued by other sectors by over 2 percentage points of GDP.[17] The increase in euro area residents' holdings of non-euro area issued portfolio debt securities was entirely due to euro area resident "other financial corporations"; this includes investment funds, insurance corporations and pension funds. The largest part (65%) of the increase in the holdings of non-euro area issued portfolio debt securities by euro area residents was accounted for by securities issued by non-euro area governments.

14 Net investment positions in direct investment, financial derivatives and reserve assets changed by 1 percentage point of GDP, or even less, over the same period.

15 In terms of nominal amounts in euro billions, the relative contributions of assets and liabilities to the decline in net foreign liabilities were more similar. Expressed as ratios to GDP, however, GDP growth effects mitigated the impact of an increase in outstanding amounts (as observed in the case of assets), while amplifying a decrease in outstanding amounts (as observed in the case of liabilities).

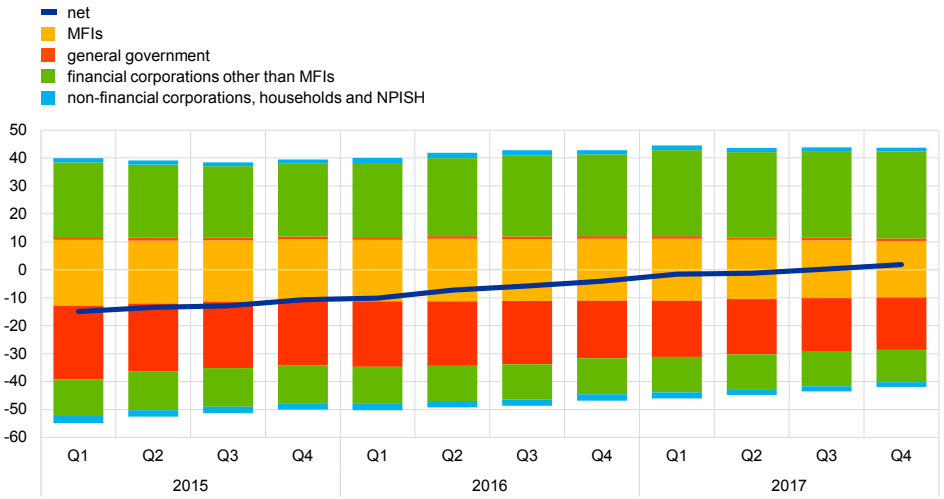
16 See the box entitled "Which sectors sold the government securities purchased by the Eurosystem?", *Economic Bulletin*, Issue 4, ECB, 2017.

17 See the box entitled "Analysing euro area net portfolio investment outflows", *Economic Bulletin*, Issue 2, ECB, 2017.

**Chart C**

Breakdown of euro area portfolio debt positions by resident sector

(outstanding amounts at end of period as a percentage of four-quarter moving sums of GDP)




Sources: ECB and Eurostat.
Notes: Negative figures indicate euro area liabilities, while positive figures indicate assets. The latest observation is for the fourth quarter of 2017. NPISH stands for "non-profit institutions serving households".

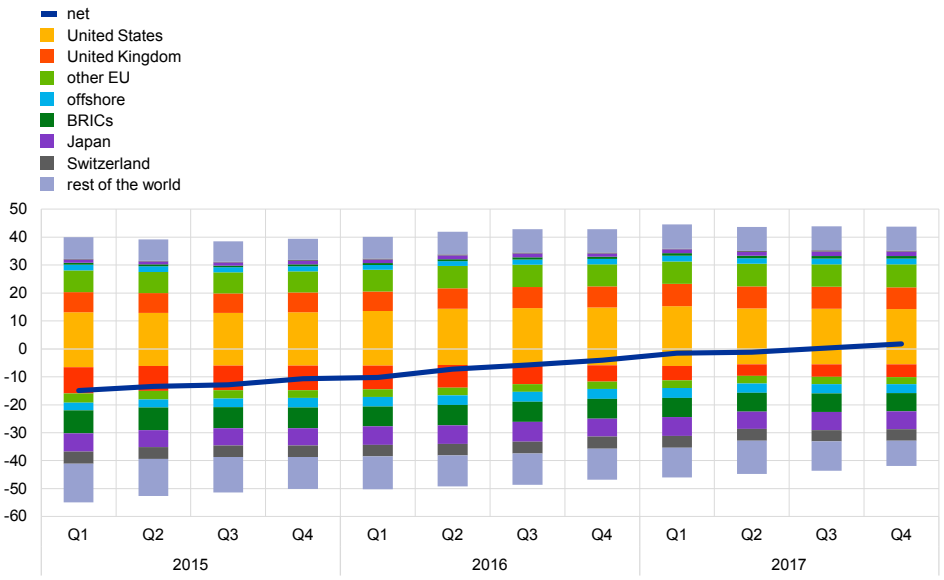
**Since the first quarter of 2015 Japanese residents have become the largest foreign holders of euro area debt securities, surpassing residents of the United Kingdom and the United States (see Chart D).** At the end of 2017 Japanese holdings of euro area debt securities were at the same level (6% of euro area GDP) as in the first quarter of 2015, while during that period the most significant reductions in holdings of euro area debt securities were by investors from the United Kingdom (a reduction of 5 percentage points of GDP), followed by investors from the "BRIC" countries (a reduction of 2 percentage points of GDP) and the United States (a reduction of 1 percentage point of GDP).[18]

[18] The "BRIC" countries comprise Brazil, Russia, India and China.

**Chart D**

Breakdown of euro area portfolio debt positions by geographic area of counterparts

(outstanding amounts at end of period as a percentage of four-quarter moving sums of GDP)




Sources: ECB and Eurostat.
Notes: Negative figures indicate euro area liabilities, while positive figures indicate assets. The "BRIC" countries comprise Brazil, Russia, India and China. The "rest of the world" includes all other countries not otherwise identified, as well as any unallocated positions. Data for liabilities are based on ECB estimates. The latest observation is for the fourth quarter of 2017.

**The most pronounced increase in foreign debt securities holdings by euro area investors was in securities issued by entities resident in the United States, followed by those in the United Kingdom and Japan.** The United States thus remained the most important destination country for investment in debt securities by euro area residents (14% of euro area GDP), followed by the United Kingdom (8% of GDP). The aggregate holdings by euro area investors of securities issued by residents of other non-euro area EU countries (excluding the United Kingdom) amounted to 8% of GDP at the end of 2017.

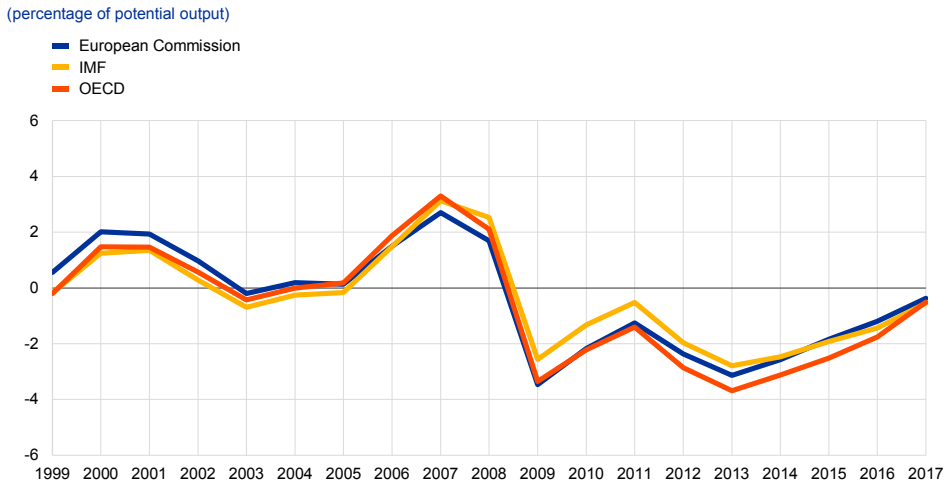
# 3 Measures of slack in the euro area

**Prepared by Béla Szörfi and Máté Tóth**

**This box aims to illustrate the difficulties in measuring slack in the euro area economy and the high uncertainty surrounding the estimates.** Although recent estimates of potential output suggest that slack is diminishing (see Chart A), a number of factors suggest that such figures may underestimate the degree of slack remaining in the economy. For instance, inflation and wage pressures have remained subdued. In addition, labour supply, participation and productivity have increased, which may support an increase in potential output that has not yet been fully accounted for. Finally, elevated levels of the broad measure of labour underutilisation may also have suggested a larger degree of labour market slack than the headline unemployment rate.[19] On the other hand, survey indictors showing historically high levels of capacity utilisation and labour shortages point to emerging tightness in euro area labour markets.

**Chart A**

Output gap estimates of international institutions for the euro area




Sources: European Commission autumn 2017 forecast, IMF April 2018 World Economic Outlook and OECD November 2017 Economic Outlook.

**Specifically, economic slack can be associated with the concept of the output gap.** The output gap is defined as the difference between the levels of real GDP (observable) and potential output (unobservable) as a percentage of potential output, which in turn is the underlying trend of real GDP, i.e. the level of production that can be achieved without raising inflationary pressures. It is worth noting that inflation developments are also influenced by factors other than the output gap, such as cost shocks (e.g. changes in oil prices), the formation of inflation expectations, changes in firms' pricing power, or in the medium to long run, by monetary developments. If real GDP is below potential output so defined, the output gap is negative. This means

[19] See "Assessing labour market slack", *Economic Bulletin*, Issue 3, ECB, 2017, and "Three indicators to complement the standard definition of employment and unemployment", *Monthly Bulletin*, ECB, June 2013.

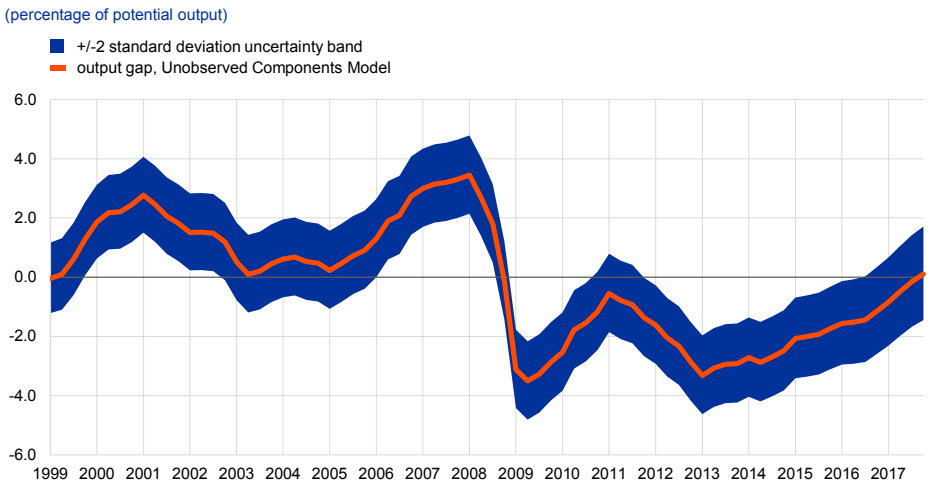
that there is slack in the economy and, ceteris paribus, inflationary pressures are more likely to be subdued. By contrast, if the level of real GDP exceeds potential output, then the output gap is positive and inflationary pressures are more likely to emerge. Although slack and the output gap can be seen as broadly equivalent, it is worth noting that the output gap is often seen as an aggregate concept, while slack can persist in some markets (for example in the labour market), industries or regions even when the output gap has been closed or is in positive territory.

**Since potential output and thus the output gap are unobservable, they can only be estimated with uncertainty.** The output gap has to be extracted from observable data, based on statistical or economic models. The choice of a specific model always implies judgement and introduces uncertainty. Since models are simplifications of reality, not all information that is possibly relevant for estimating the output gap can be processed. In addition, owing to the typically stochastic nature of these models, a degree of uncertainty inherently stems from the characteristics of the shocks that are assumed in them. Uncertainty also relates to the parameters of such models which can only be estimated with imprecision. In addition, economic relationships – such as the slope of the Phillips curve or the reaction of employment to economic activity – might change over time. Also the data, both historical and projected, on which the models are estimated is subject to revisions. Overall, due to these different and potentially interrelated types of uncertainty, any point estimate of the output gap has to be taken with a significant degree of caution.

**A model-based estimate illustrates the point by suggesting an output gap that is close to zero, although surrounded by a high degree of uncertainty (see Chart B).** For illustrative purposes, an Unobserved Components Model (UCM) is used to estimate potential output and its components for the euro area. The model uses a multivariate filter based on a Cobb-Douglas production function and includes some theoretical economic relationships, such as wage and price Phillips curves and Okun's law. According to the UCM, the euro area output gap is likely to have already closed towards the end of 2017. Yet, a plausible range covers an output gap that currently lies roughly between -1.5% and 1.5%.

**Chart B**

Output gap estimate of an Unobserved Components Model for the euro area




Sources: Eurostat and ECB staff calculations.

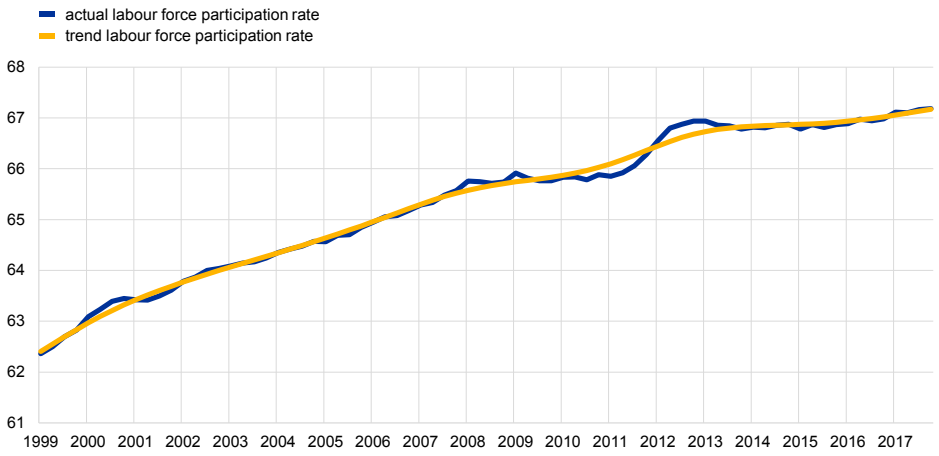
**Recent labour supply shocks are likely to be supporting the growth of both potential and actual output.** Labour force participation has been increasing in recent years in the euro area, driven by increasing participation of women and older people. This increase is mainly related to the increasing educational level of the working age population, as well as recent labour market reforms in many euro area countries, and it therefore appears to be largely independent of the business cycle.[20] This is confirmed by the estimated trend labour force of the UCM: cyclical variation of the labour force participation rate is rather limited, and most of the increase seen in the past is attributable to the trend. Importantly, this means that increased labour force participation points to increases in both potential and actual output, leaving the output gap largely unaffected (see Chart C). If, however, the impact of recent labour and product market reforms is not fully captured by model-based estimates, potential output might be higher and the degree of slack might be larger than presented in Chart B.

[20] See the article entitled "Labour supply and employment growth" in *Economic Bulletin*, Issue 1, ECB, 2018.

**Chart C**

Labour force participation rate for the euro area

(percentage of working age population)




Sources: Eurostat and ECB staff calculations.

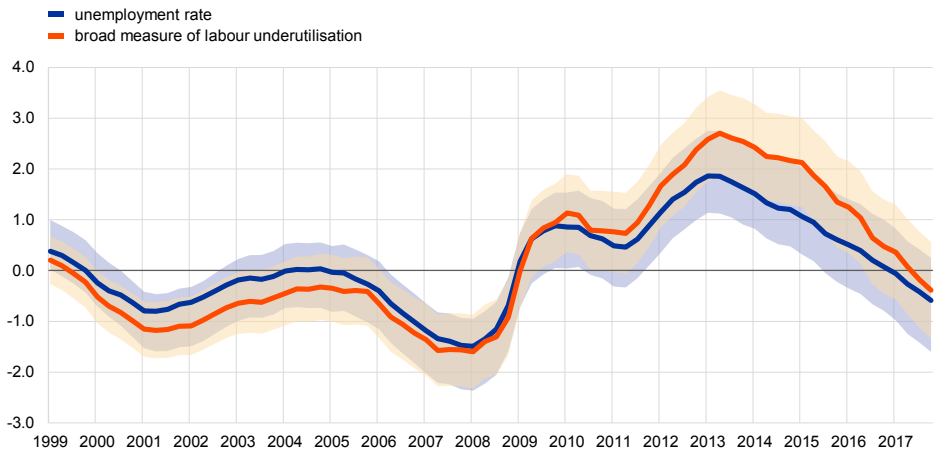
**The broad measure of labour underutilisation suggests that slack was larger during the financial crisis and over the recovery than indicated by the headline unemployment rate.** The broad measure of labour underutilisation covers underemployed part-time workers, those who are seeking work but are not available and those who are available but are not seeking work (this latter group includes discouraged workers). However, this may have been a temporary phenomenon that appears to be fading away. To examine whether broader measures of underemployment indicate a larger degree of slack, the headline unemployment rate is replaced with the broad measure of labour underutilisation in the UCM.[21] This is consistent with the assumption that the level of the broad measure of labour underutilisation cannot be considered as a pure measure of slack, and has to be assessed against its structural or trend component, as is the case for the unemployment rate. Between 2011 and 2016 the degree of labour market slack in the euro area appears to have been larger when looking at the broad measure of labour underutilisation. However, the difference started to fade in 2015, due to strong declines in the number of discouraged workers and the number of underemployed part-time workers (see Chart D).

[21] Underlying data to compute the broad measure of labour underutilisation are published starting from the first quarter of 2008 only. For the period prior to 2008, the broad measure of labour underutilisation was backcasted by ECB staff, using annual data based on a similar concept, as well as a Dynamic Factor Model consisting of more than 50 labour market variables.

## Chart D

### Labour market slack according to different measures

(percentage of the labour force; broad measure of labour underutilisation as a percentage of the potential additional labour force)




Sources: Eurostat and ECB staff calculations.
Notes: The shaded areas denote +/-2 standard deviation uncertainty bands. The blue shaded area relates to the unemployment rate and the cream shaded area relates to the broad measure.

# Articles

## 1 Real convergence in central, eastern and south-eastern Europe

**Prepared by Piotr Żuk, Eva Katalin Polgar, Li Savelin, Juan Luis Diaz del Hoyo and Paul König**

*This article establishes stylised facts about convergence and analyses the sources of economic growth in central, eastern and south-eastern European (CESEE) economies within and outside the European Union (EU).*[22] *It also compares the performance across countries and identifies the challenges that these economies face on the way to further advancing convergence. Although all CESEE economies have converged towards the most advanced EU economies since 2000, progress has been heterogeneous. While some countries have experienced fast economic growth and a speedy catching-up, for others the catching-up process has been rather slow. Economic convergence has been much faster in the CESEE countries that became members of the EU (including those which later joined the euro area) than in the Western Balkan countries that are currently EU candidates or potential candidates. Convergence was particularly rapid before the global financial crisis, but slowed down thereafter.*

*The article identifies several factors that are common to the most successful countries in the region in terms of the pace of convergence since 2000. These include (inter alia) improvements in institutional quality, external competitiveness and innovation, increases in trade openness, high or improving levels of human capital, and relatively high investment rates. Looking ahead, accelerating and sustaining convergence in the region will require further efforts to enhance institutional quality and innovation, reinvigorate investment, and address the adverse impact of population ageing. For EU candidates and potential candidates, EU accession prospects might constitute an anchor for reform momentum – in particular, but not exclusively, in the key area of enhancing institutional quality – and thus support the long-term growth prospects and real convergence of these countries.*

[22] This article focuses on the CESEE countries which are EU members (referred to as "new EU Member States" (NMS) and comprising Bulgaria, the Czech Republic, Estonia, Croatia, Latvia, Lithuania, Hungary, Poland, Romania, Slovenia and Slovakia) or which are EU candidates or potential candidates (referred to as the "Western Balkans" and comprising Albania, Bosnia and Herzegovina, the former Yugoslav Republic of Macedonia, Montenegro and Serbia). Kosovo is also included in the analysis wherever data are available (without prejudice to positions on status, in line with the United Nations Security Council Resolution 1244 and the International Court of Justice's opinion on Kosovo's declaration of independence). Although Turkey is an EU candidate country, it is not included in the analysis, since it does not share the background of an economic transition from a command economy to a market economy.

# 1 Introduction

**CESEE economies embarked on a major economic transition from command economies to market economies in the 1990s.** This economic transition has largely shaped economic developments in these countries since 1990. Despite high transitional costs and overall mixed economic performance in the 1990s, most CESEE economies have experienced high economic growth since 2000, which has contributed to a catching-up towards the most advanced economies in the EU.

**This article analyses the income convergence of CESEE economies towards the most advanced EU economies since 2000.**[23] The analysis includes: (i) the eleven economies that joined the EU in this period, five of which have since also adopted the euro; and (ii) the six economies from the Western Balkans that are EU candidates or potential candidates. Real convergence – understood as a process in which economic growth in poorer countries is faster than that in richer ones, and so real income differences between the countries diminish over time – has far-reaching implications for economic welfare and well-being. Furthermore, the attainment of sustainable convergence remains important for economic and monetary integration with, and within, the EU. This stems from the fact that achieving sustainable convergence narrows real income disparities, supports social cohesion and thus facilitates the functioning of Economic and Monetary Union.

**Furthermore, there is a close link between convergence in real incomes and convergence in prices (nominal convergence).** Faster-growing (converging) economies usually experience real exchange rate appreciation, which often materialises through higher inflation rates. After entering Monetary Union, however, higher inflation may lead to lower real interest rates than in other Monetary Union member countries. Along with the typically higher natural interest rates, the likelihood of the faster-growing economies experiencing boom-bust cycles rises, unless fiscal or macroprudential policy instruments are properly applied in such economies to preserve macro-financial stability. By the same token, real income convergence facilitates abiding by the Maastricht convergence criteria for Monetary Union membership (including the inflation and long-term interest rate criteria), which remains relevant for EU Member States that are not yet using the euro.[24]

**The lack of income convergence is often coupled with a low degree of institutional quality,** i.e. the institutional and governance standards that facilitate the economic growth of a country and make it more resilient to shocks. This may

[23] Convergence should be analysed over a long time horizon. However, due to the economic transition which CESEE countries underwent in the 1990s and data limitations in some countries, 2000 appears to be the natural starting point for conducting such an analysis for this group of countries.

[24] A more detailed analysis of the relationship between real convergence and nominal convergence (which, together with fiscal convergence, are often referred to as “Maastricht convergence”) can be found in Diaz del Hoyo, J.L., Dorrucci, E., Ferdinand Heinz, F. and Muzikarova, S., “Real convergence in the euro area: a long-term perspective”, *Occasional Paper Series*, No 203, ECB, December 2017.

complicate the further integration and smooth functioning of the EU and of the euro area.[25]

Against this background, Section 2 reviews stylised facts about convergence in CESEE countries, Section 3 analyses the drivers of economic convergence in this group of countries and Section 4 concludes.

## Box 1
## Background information on CESEE countries

**Prepared by Piotr Żuk, Eva Katalin Polgar, Li Savelin, Juan Luis Diaz del Hoyo and Paul König**

The CESEE economies have several characteristics in common. First, they share a joint legacy of being command economies that embarked on a transition process to market economies in the 1990s. Second, all of them are small open economies with a close proximity to and strong economic ties with larger EU economies. Third, all of them have either joined the EU already or are EU candidates or potential candidates with the prospect of joining the EU at some point in the future. The table presents basic country information for all of the economies analysed in this article. Overall, the country sample includes 17 CESEE countries, comprising eleven new EU Member States (NMS) – which include six non-euro area EU Member States (referred to in the charts as non-euro area NMS) and five euro area NMS – and six EU candidates and potential candidates, which in this article are collectively referred to as the Western Balkans.

[25] See also Cœuré, B., "Convergence matters for monetary policy", speech given at the conference "Innovation, firm size, productivity and imbalances in the age of de-globalization", Brussels, 30 June 2017.

**Table A**

EU membership status, population and income levels

| Country | Official status | Population (2016, millions) | Real GDP per capita (2016, PPP, international USD) | Real GDP per capita (2016, as a percentage of the EU28 average) |
|---|---|---|---|---|
| **Euro area NMS** | | | | |
| **Slovenia** | Member since 2004; using the euro since 2007 | 2.1 | 29,933 | 82.4 |
| **Slovakia** | Member since 2004; using the euro since 2009 | 5.4 | 29,224 | 80.4 |
| **Estonia** | Member since 2004; using the euro since 2011 | 1.3 | 28,095 | 77.3 |
| **Latvia** | Member since 2004; using the euro since 2014 | 2.0 | 23,718 | 65.3 |
| **Lithuania** | Member since 2004; using the euro since 2015 | 2.9 | 27,904 | 76.8 |
| **Non-euro area NMS** | | | | |
| **Czech Republic** | Member since 2004 | 10.6 | 31,353 | 86.3 |
| **Hungary** | Member since 2004 | 9.8 | 25,654 | 70.6 |
| **Poland** | Member since 2004 | 38.4 | 26,051 | 71.7 |
| **Bulgaria** | Member since 2007 | 7.1 | 17,794 | 49.0 |
| **Romania** | Member since 2007 | 19.7 | 21,608 | 59.5 |
| **Croatia** | Member since 2013 | 4.2 | 21,547 | 59.3 |
| **Western Balkans** | | | | |
| **Albania** | Candidate since June 2014 (accession negotiations have not yet been opened) | 2.9 | 11,359 | 31.3 |
| **FYR Macedonia** | Candidate since December 2005 (accession negotiations have not yet been opened) | 2.1 | 13,055 | 35.9 |
| **Montenegro** | Candidate since December 2010 (negotiations opened in June 2012) | 0.6 | 15,725 | 43.3 |
| **Serbia** | Candidate since March 2012 (negotiations opened in January 2014) | 7.1 | 13,723 | 37.8 |
| **Bosnia and Herzegovina** | Potential candidate (applied for EU membership in February 2016) | 3.5 | 11,327 | 31.2 |
| **Kosovo** | Potential candidate (has not applied for EU membership) | 1.8 | 9,332 | 25.7 |

Sources: European Commission, Haver Analytics, World Bank and ECB calculations.

## 2 Convergence in CESEE economies: stylised facts

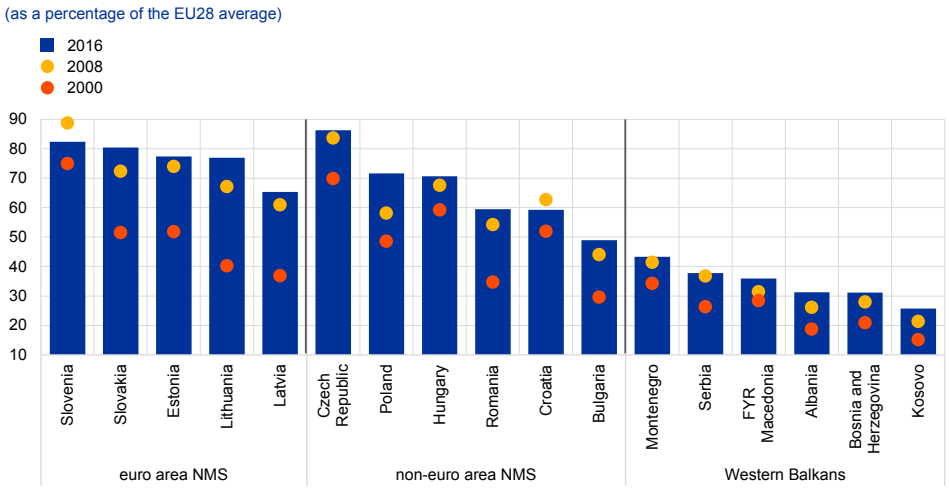
**In all CESEE economies, real GDP per capita in PPP[26] measured as a share of the EU28 average has increased since 2000 (see Chart 1).** GDP per capita growth was particularly strong in the run-up to the 2008-09 global financial crisis, reaching close to, or exceeding, 5% in some new EU Member States and in the

[26] Using purchasing power parity (PPP) eliminates the effect of price level differences between countries and thus allows a more accurate measurement of welfare that can be compared across countries.

poorest Western Balkan economies. The strong economic expansion contributed to a faster catching-up with the higher-income EU economies. However, since 2009 economic growth has slowed in all countries in the region. As a result, the convergence towards the EU28 average has decelerated, although some countries, such as the Baltic countries and Poland, managed to catch up at a relatively fast pace again after 2010.

**Chart 1**

Real GDP per capita in PPP in 2000, 2008 and 2016




Sources: World Bank (World Development Indicators – WDI) and ECB calculations.

**The catching-up process in CESEE countries that are EU Member States has been generally faster than in the Western Balkans.** This is partly due to the destructive impact of the Yugoslav wars in the 1990s, which delayed the economic transition process in many Western Balkan economies by nearly a decade. Developments have also been heterogeneous across CESEE countries that are EU Member States. Some of them – in particular the Baltic countries and Slovakia, which have joined the euro area, as well as Bulgaria, Poland and Romania – have experienced particularly fast convergence. At the same time, other CESEE EU Member States have found it difficult to converge to the EU average beyond the levels already achieved by 2008. In fact, GDP per capita in Croatia and Slovenia diverged from the EU average after 2008, although this negative trend has been reversed in more recent years.

**Some new EU Member States, such as the Czech Republic, Slovenia and Slovakia, have by now reached GDP per capita levels somewhat above 80% of the EU average (based on 2016 data).** By contrast, some other new EU Member States still remain well below the EU average. This is the case, in particular, for Bulgaria (with the lowest GDP per capita level of these countries, at close to 50%), Romania and Croatia (both at around 60%).

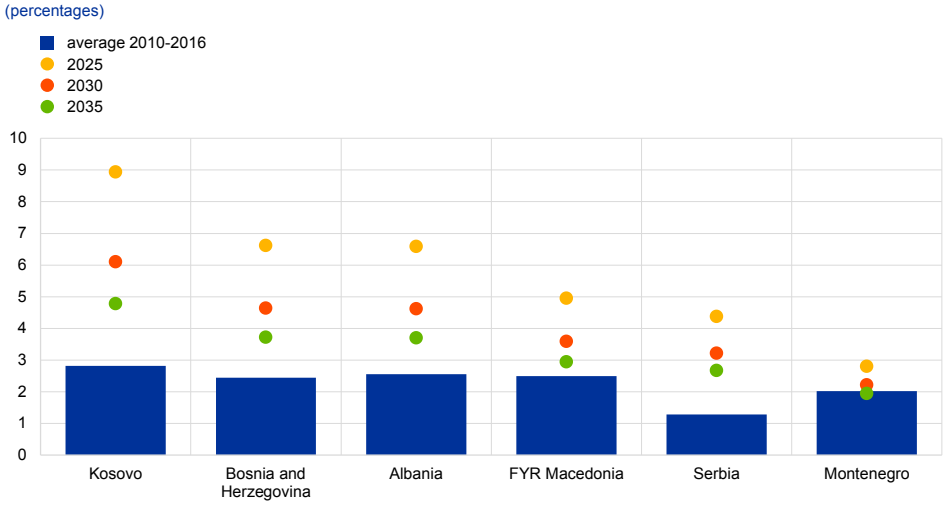
**In turn, in 2016 all Western Balkan economies had income levels amounting to less than 50% of the EU28 average.** The lowest GDP per capita in PPP terms was measured in Kosovo (26%) and the highest in Montenegro (43%). Overall, most Western Balkan economies are still far from achieving the level of income

convergence towards the EU average that was typical at the time of EU accession for other CESEE countries (which in most cases amounted to around 50-60% of the average GDP per capita in the EU).[27]

**Assuming the continuation of the GDP growth trends observed in recent years, many new EU Member States will converge relatively quickly (some as soon as in the next decade) to the EU28 average in terms of GDP per capita.** At the same time, for many other new Member States, convergence to the EU28 average before 2030 does not appear to be achievable without a marked acceleration in GDP growth going forward.[28] As can also be seen in Chart 2, which depicts the results of a similar mechanical computation for the Western Balkans, all of these economies (except Montenegro) would need to exhibit much higher GDP growth rates than recorded in previous years in order to reach 50% of the average GDP per capita of the EU28 by 2030.

**Chart 2**

Growth required in GDP per capita in the Western Balkan countries to achieve 50% of the EU28 average by 2025, 2030 and 2035




Sources: World Bank (WDI) and ECB calculations.
Note: Assuming average annual GDP growth in the EU28 (per capita, in PPP) of 1.2%, i.e. the rate observed in the period 2010-16.

**Overall, there has been a negative correlation between income levels in 2000 and real GDP growth in subsequent years (see Chart 3).** This indicates that as a general trend poorer CESEE countries have experienced stronger economic growth since 2000. In this context, two observations appear particularly striking. First, a stronger convergence process appears to have occurred in the new EU Member States that joined the euro area than in the other two groups of countries. Second, an analysis of the Western Balkan countries and the non-euro area new EU Member

[27] Among the CESEE countries that have joined the EU since 2004, the lowest GDP per capita (as a percentage of the EU28 average) at the time of accession was observed in Bulgaria (42.3%) in 2007. In addition, some other countries had levels of around 50%, e.g. Latvia (48.3%) and Poland (51.2%) in 2004, and Romania (49.4%) in 2007.

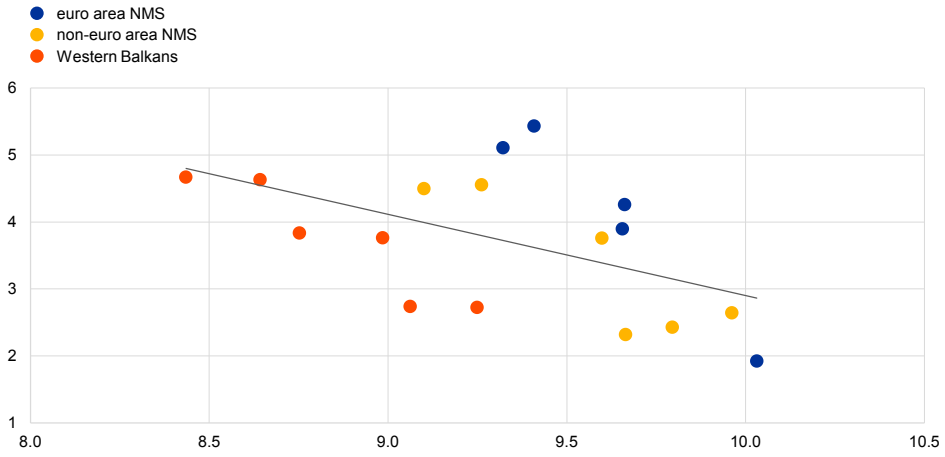
[28] These mechanical calculations assume that GDP growth in the EU and CESEE countries remained at the average level from 2010 to 2016. These calculations do not take into account the impact of the United Kingdom leaving the EU, which will reduce in statistical terms the EU average income level.

States with similar income levels in 2000 reveals that the latter group has experienced a much higher average annual growth rate. These two observations might point to the positive role that EU accession has played in the convergence of CESEE economies.

**Chart 3**

Initial income levels and average GDP growth between 2000 and 2016

(x-axis: log of real GDP per capita in PPP, 2000; y-axis: average growth rate of real GDP per capita in PPP, 2000-16 (percentages))




Sources: World Bank (WDI) and ECB calculations.

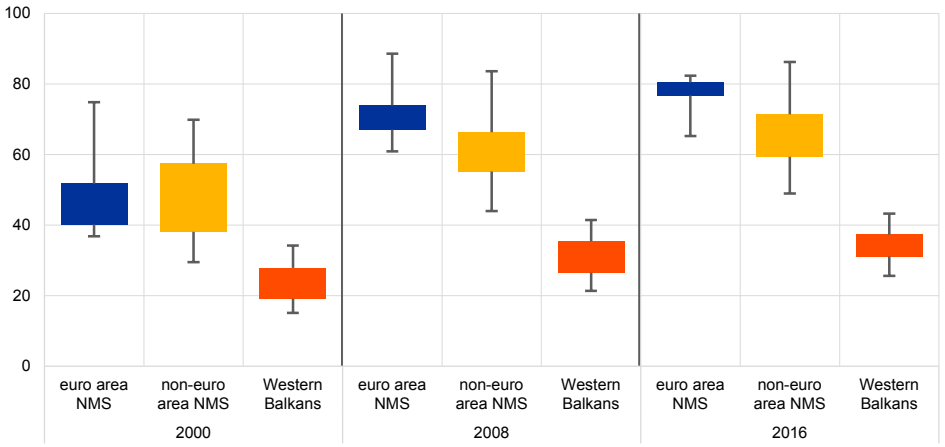
**Income dispersion within the group of new EU Member States and the group of Western Balkan economies has narrowed since 2000.**[29] At the same time, the real incomes of these two groups of countries have diverged (see Chart 4). These developments support the "club convergence" hypothesis and suggest that new EU Member States and prospective EU Member States may have been converging to different steady states.

[29] As measured by the standard deviation of real GDP per capita in PPP as a share of the EU average.

**Chart 4**

Income dispersion vis-à-vis the EU28 in the period 2000-16

(real GDP per capita in PPP as a share of the EU28 average)




Sources: World Bank (WDI) and ECB calculations.
Notes: The upper whisker denotes the maximum value in the sample and the lower whisker, the minimum value. The boxes indicate the dispersion between the first and the third quartiles.

## Box 2

### Theories of convergence and economic growth

**Prepared by Piotr Żuk, Eva Katalin Polgar, Li Savelin, Juan Luis Diaz del Hoyo and Paul König**

Several different concepts of economic convergence have been developed in the literature, but the so-called "β-convergence" and "σ-convergence" are the most frequently used. β-convergence implies that lower-income countries tend to grow faster than higher-income ones and is a necessary, but not sufficient, condition for σ-convergence, which entails that the dispersion in real incomes among countries tends to diminish over time. Thus, if β-convergence holds, poorer countries grow faster than richer ones, but higher growth rates may not be sufficient to equalise income levels across countries over time due to high initial income differences between them, so σ-convergence does not necessarily follow. The concept of β-convergence derives from the neoclassical growth framework and is based on the assumption of diminishing returns to capital.[30] In this framework, capital-scarce (low-income) economies exhibit higher returns on this factor of production than capital-abundant (high-income) ones, which promotes faster capital accumulation and economic growth in the former group of economies.

The concept of the conditionality of convergence is also often discussed in the literature. Conditional convergence takes into account that institutional settings or policies may differ across countries. Thus, economies may converge towards different steady states and economic growth in poorer economies may not automatically be higher than that in richer ones; whereas unconditional (absolute) convergence suggests that poorer countries grow faster than richer ones irrespective of the institutional settings or policies pursued.[31] Empirical evidence, however, does not find

30 Solow, R., "A contribution to the theory of economic growth", *Quarterly Journal of Economics*, Vol. 70(1), 1956, pp. 65-94, and Swan, T.W., "Economic Growth and Capital Accumulation", Economic Record, Vol. 32(2), 1956, pp. 334-361.

31 Barro, R.J. and Sala-i-Martín, X.I., *Economic Growth*, 2nd Edition, MIT Press, Cambridge (Mass.), 2004.

conclusive evidence of unconditional convergence for large country sets. In the words of Rodrik[32], "Whatever convergence one can find is conditional: it depends on policies, institutions, and other country-specific circumstances" such as the saving rate, demographics or foreign aid. One implication of conditional convergence is that economies with similar characteristics (such as OECD or CESEE economies) are likely to converge to the same steady state in the longer term, and that would differ from the steady state of other groups of countries that share different characteristics. This concept is often described as "club convergence".

If – as the conditional convergence concept implies – convergence is not a quasi-automatic process, then determining the drivers of economic growth and conditions that are supportive of growth would appear to be crucial from a policy perspective. While the growth models of Solow and Swan focused on capital accumulation as the main driver of growth (and treated technological progress as exogenous), the next wave of the theoretical literature strived to endogenise technological change by using models which included the accumulation of human capital, innovation, investment in research and development or learning by doing.[33] However, endogenous growth models have also been criticised for not explaining the fundamental determinants of growth. For example, cross-country differences in innovation or human capital accumulation may explain differences in income levels, but they do not answer the question of why the countries pursue different policies in these areas.

Therefore, in the 1990s the literature started to focus on institutions as the fundamental explanation of growth, of income differences across countries, and of convergence. Institutions are understood as "the rules of the game in a society", which shape incentives of economic actors in terms of investing in physical and human capital or developing new technologies.[34] The term "institutions" may include a wide variety of "rules of the game", both formal and informal, such as property rights, contract enforcement, the effectiveness of the judicial system, the control of corruption, and the quality of regulation and governance, conflict management or political stability.[35]

Developed more recently, and linked to the focus on the role of sound institutions, is the new concept of sustainable economic convergence; this is the process whereby the income per capita levels of lower-income economies catch up, on a durable basis, with those of higher income economies. For real convergence to be sustainable, the expansion of aggregate demand must be consistent with long-term potential output growth. Higher growth that results, for instance, from a financial boom may prove to be unsustainable if not matched by higher potential growth. To be sustainable, real convergence should be underpinned by sound policies and institutions. In this

32 Rodrik, D., "Unconditional convergence", National Bureau of Economic Research (NBER) Working Paper No 17546, 2011.

33 See for example: Romer, P.M., "Increasing Returns and Long-Run Growth", *Journal of Political Economy*, Vol. 94(5), 1986, pp. 1002-1037; Romer, P.M., "Growth Based on Increasing Returns Due to Specialization", *American Economic Review*, Vol. 77(2), 1987, pp. 56-62; Romer, P.M., "Endogenous Technological Change", *Journal of Political Economy*, Vol. 98(5), 1990, pp. 71-102; Aghion, P. and Howitt, P., "A Model of Growth Through Creative Destruction", *Econometrica*, Vol. 60(2), 1992, pp. 323-351; and Lucas, R.E., "On the Mechanics of Economic Development", *Journal of Monetary Economics*, Vol. 22(1), 1988, pp. 3-42.

34 North, D., *Institutions, Institutional Change and Economic Performance*, Cambridge University Press, 1990; Acemoglu, D., Johnson, S. and Robinson, J., "Institutions as a Fundamental Cause of Long-Run Growth", in Aghion, P. and Durlauf, S. (eds.), *Handbook of Economic Growth*, North Holland, Amsterdam, 2005, pp. 385-472.

35 Rodrik, D., "Institutions for High-Quality Growth: What They are and How to Acquire Them", NBER Working Paper No 7540, 2000.

respect, it has been shown recently that institutional quality is an important explanatory variable for cross-country growth differentials across the EU and for long-term growth in European economies.[36]

Another prominent concept in the literature focuses on geographical advantages and agglomeration effects. According to these concepts, geographical location may create advantageous conditions for growth and productivity due to possible complementarities and spillovers between firms in clusters, which might result in economies of scale in production and attract new companies. At the same time, geographical location influences transportation costs, while climate might affect productivity directly (e.g. in agriculture) or indirectly through the health and human capital of the population. One important implication is that the agglomeration effects may be self-reinforcing, which could explain the persistency of the dispersion of income levels across regions.[37] The agglomeration effects also help to explain why some geographical areas have been more economically successful than others, despite similar characteristics in terms of institutional quality, for example.

## 3 Drivers of economic convergence in CESEE countries

This section is structured as follows: Section 3.1 presents the results of a growth accounting exercise for CESEE economies; Sections 3.2 and 3.3 analyse, respectively, both capital and labour accumulation as drivers of economic growth; and Section 3.4 reviews factors which may have had a particular impact on total factor productivity (TFP) growth in CESEE countries.

### 3.1 Growth accounting

**Growth accounting allows for a quantification of the contributions of capital and labour accumulation, and TFP growth, to total economic growth.** Under this approach, output is assumed to be a function of the inputs used in the production process (capital and labour) and total factor productivity[38]. The capital stock and labour supply (and their respective shares in GDP) can in principle be measured, as can their contributions to GDP growth. However, TFP and its contribution to growth are usually assumed to be equal to the part of economic growth that cannot be explained by the accumulation of those two factors of production.

**According to this approach, economic growth in CESEE countries since 2000 has been based mostly on rising total factor productivity (see Chart 5).** This can be largely attributed to reforms fostering the transition from a command

36 See for instance Masuch, K., Moshammer, E. and Pierluigi, B., "Institutions and growth in Europe", CEPS Working Document No 421, 2016.

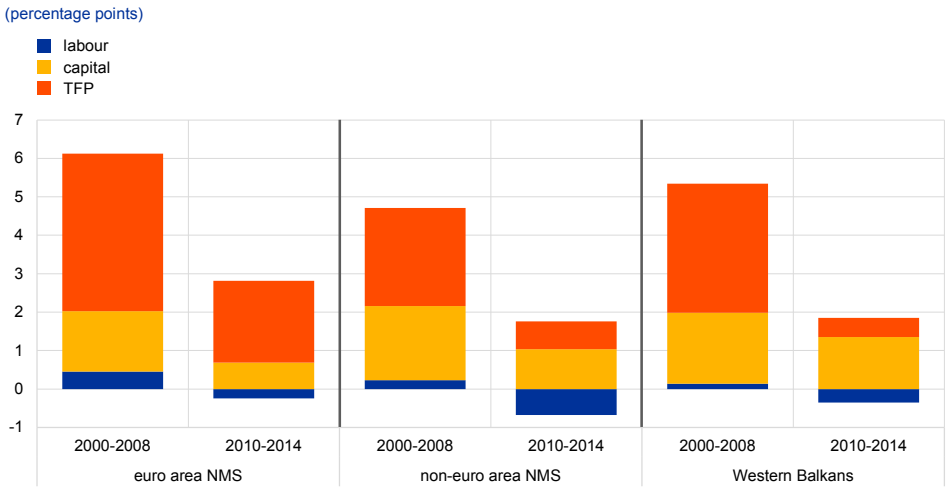
37 See, among others: Krugman, P., "Increasing returns and economic geography", *Journal of Political Economy*, Vol. 99, 1991, pp. 483-499; Fujita, M., Krugman, P. and Venables, A.J., *The Spatial Economy: Cities, Regions, and International Trade*, MIT Press, 1999; Gallup, J.L., Sachs, J.D. and Mellinger, A.D., "Geography and economic development", *International Regional Science Review*, Vol. 22, 1999, pp. 179-232.

38 According to its more general definition, total factor productivity is the portion of output that is not explained by the amount of inputs used in production. Thus, it is calculated as a residual and its level is determined by how efficiently and intensively the inputs are used in the production process.

economy to a market economy, which supported a more efficient use of factors of production. Capital accumulation also contributed positively to growth. By contrast, these countries have experienced mixed demographic developments and, as a result, the labour contribution to growth has been, on average, close to zero. This growth pattern is somewhat different from that of many other converging emerging market economies often analysed in the literature, where growth has mostly been based on both capital and labour accumulation.[39]

**Chart 5**

Contributions to economic growth from labour, capital and total factor productivity (TFP) in the periods 2000-08 and 2010-14




Sources: Penn World Table version 9.0 and ECB calculations.
Notes: The labour share in Albania and Montenegro is assumed to be equal to the average of FYR Macedonia, Bosnia and Herzegovina, Serbia and Croatia. Average hours worked in the Western Balkan countries are assumed to be equal to the average worked in the new Member States. The calculations assume a standard Cobb-Douglas production function. Data are available only up to 2014.

**Nevertheless, the relative strength of the drivers of economic growth in the CESEE region has been heterogeneous both across countries and periods of time.** Before the crisis (i.e. between 2000 and 2008), the relative strength of the main drivers of growth was broadly similar throughout the region, with a particularly strong contribution from TFP growth and capital accumulation. While labour accumulation on average also supported economic growth, its contribution remained small in all groups of economies.

**The post-crisis economic slowdown was mostly associated with slower TFP growth.** As a result, economic growth in the region became more reliant on capital accumulation. This was particularly visible in the Western Balkans, where capital accumulation became, in practice, the only driver of economic growth. In the new EU Member States outside the euro area, the contribution from capital accumulation also became the main driver of growth; however, TFP growth also explained a significant part of total economic growth. By contrast, in the euro area countries of the region, TFP growth remained the main driver of growth. At the same time,

[39] See, for example, *Transition Report 2017-18*, European Bank for Reconstruction and Development (EBRD), 2017.

headwinds from a shrinking labour force became a drag on growth in all three groups of countries.

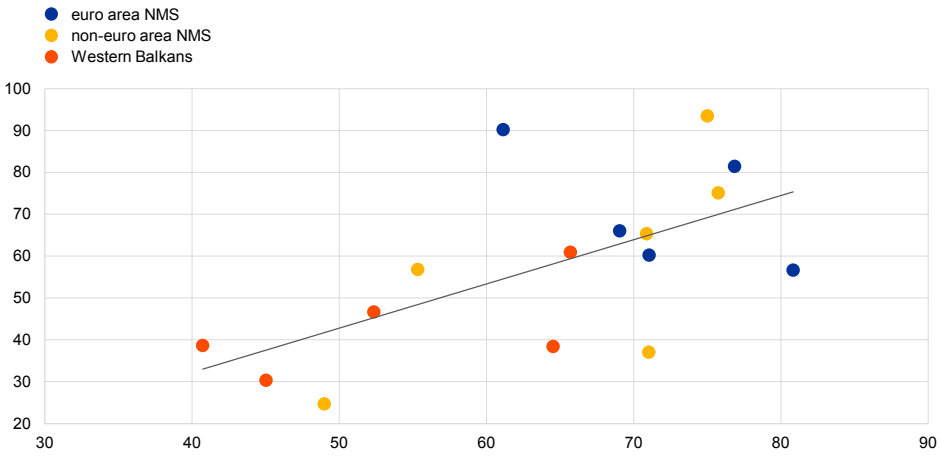
## 3.2 The capital stock and its accumulation

**The capital stock per person employed remains substantially below the EU28 average in almost all CESEE economies (see Chart 6).** The gaps to more advanced EU economies are particularly large in south-eastern Europe, where in some countries the capital stock amounts to only around one-third of the EU28 average. Low capital stocks are also mirrored in the poor quality of infrastructure, in particular in prospective EU member countries.[40]

**Chart 6**

Capital stock per person employed and labour productivity in CESEE countries in 2014

(x-axis: GDP per person employed (index: EU28 = 100); y-axis: capital stock per person employed (index: EU28 = 100))




Sources: Penn World Table version 9.0 and IMF (World Economic Outlook).
Notes: The blue dots depict new Member States which have adopted the euro, the yellow dots new Member States not part of the euro area and the red dots the Western Balkan economies. Data are available only up to 2014.

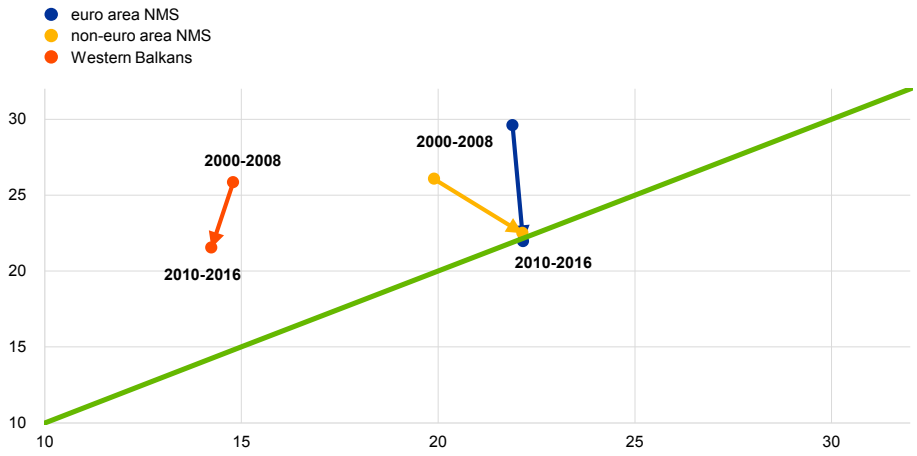
**Against this background, high investment rates appear essential for convergence towards the higher-income EU economies.** While investment was booming in most CESEE economies before 2008, domestic saving rates were not sufficient to finance investment expenditures. Thus, large saving gaps (i.e. the differences between domestic saving and investment rates relative to GDP) constituted a common characteristic of CESEE countries. These gaps were particularly large in south-eastern Europe, including in those economies that are currently EU candidates and potential candidates, and in the Baltic countries, where in some cases saving gaps exceeded 10 percentage points (see Chart 7).

[40] See, for example, the World Bank Logistics Performance Index.

**Chart 7**

Average saving and investment rates in the periods 2000-08 and 2010-16

(x-axis: saving rate (as a percentage of GDP); y-axis: investment rate (as a percentage of GDP))




Sources: IMF (World Economic Outlook) and ECB calculations.
Note: The 45-degree line is shown in green.

**In an environment of limited domestic savings, the investment boom prior to the crisis was financed largely with capital inflows.** These capital inflows included, in particular, bank loans and foreign direct investment (FDI) (see Chart 8).[41] High investment rates contributed to rapid capital accumulation and FDI also enabled technology and know-how transfer, thereby supporting TFP growth. Often the investment boom also reflected strong activity in the construction sector, driven by housing booms in many CESEE countries before the crisis; however these had a more limited impact on labour productivity and long-term growth prospects (see Chart 9).[42]

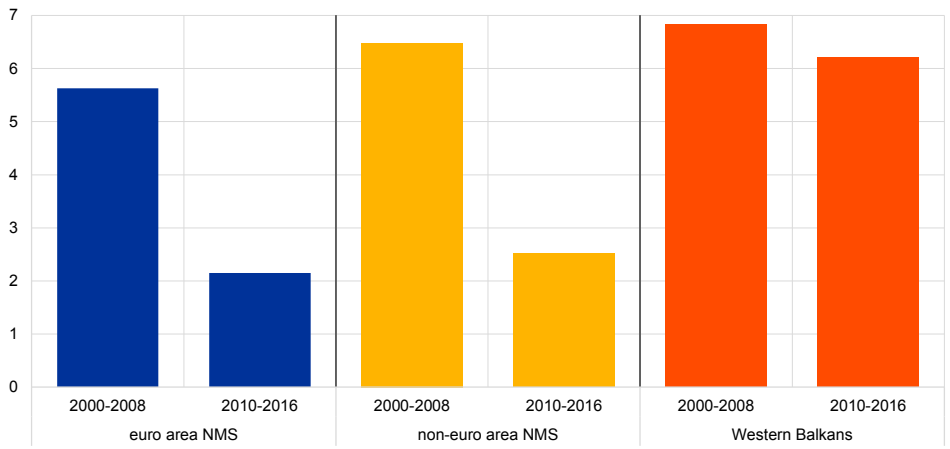
41 Bakker, B and Gulde, A.-M., "The Credit Boom in the EU New Member States: Bad Luck or Bad Policies?", International Monetary Fund (IMF) Working Paper No 10/130, 2010.

42 See, for example, Sala-i Martin, X., "I Just Ran Four Million Regressions", *American Economic Review*, Vol. 87(2), 1997, pp. 178-183. The author found that non-equipment investment has no impact on GDP growth, if the level of total investment is controlled for. At the same time, the paper confirmed a strong link between equipment investment and growth.

**Chart 8**

Average foreign direct investment (FDI) inflows in the periods 2000-08 and 2010-16

(as a percentage of GDP)



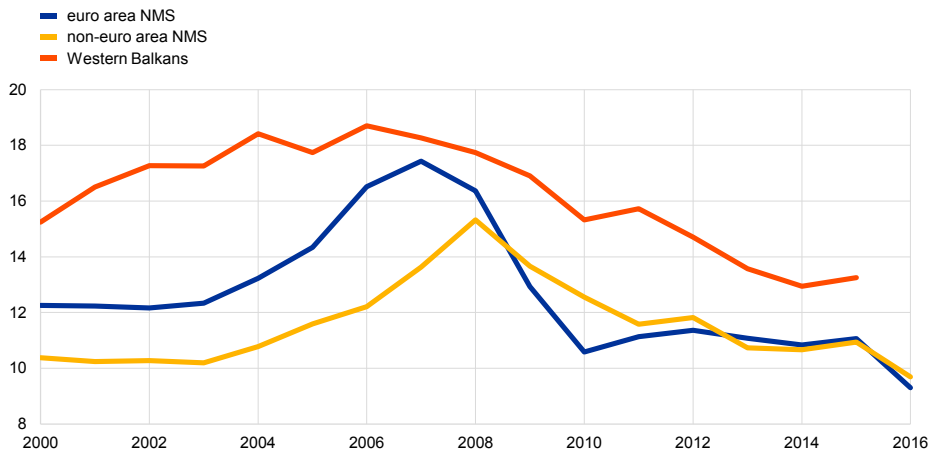

Sources: Vienna Institute for International Economic Studies (wiiw) (FDI database) and ECB calculations.
Note: Data in gross terms.

**After the crisis, investment rates declined substantially.** This took place against the backdrop of slower GDP growth, lower capital inflows, a slowdown in construction activity and lower credit growth amid private sector deleveraging following a build-up of debt before the crisis. As a result, only a few CESEE economies managed to maintain investment rates above 25% of GDP. This happened despite a larger inflow of EU structural and cohesion funds, which in the new EU Member States have risen to around 1.0-1.5% of GDP since around 2008.[43]

**Chart 9**

Average total construction value added in the period 2000-16

(as a percentage of GDP)




Sources: European Commission (AMECO database) and ECB calculations.
Notes: Averages calculated from all countries for which data are available. In the case of the Western Balkans, these include Albania, FYR Macedonia and Serbia. For non-euro area EU Member States, only Croatia has been excluded due to data availability issues.

[43] For a more detailed analysis of the role of the EU funds, see the European Investment Fund report entitled "Wind of change: Investment in Central, Eastern and South Eastern Europe", September 2017.

**In general, the larger the saving gaps before the crisis, the larger the downward adjustments in investment rates thereafter.** As investment rates fell, they became more closely aligned with domestic saving rates. However, considerable saving gaps persisted in the Western Balkan countries. While capital inflows to converging and capital-scarce economies appear to be essential to foster economic growth and convergence, they might also exacerbate volatility in these economies, in particular if portfolio capital flows or flows to the banking sector predominate over more stable sources of finance such as FDI. Thus, creating a favourable business environment in order to attract FDI is key to providing a sustainable source of investment financing in the longer term.

## 3.3 Labour accumulation

**Since 2000 only some CESEE countries have been able to reap a demographic dividend.** While the share of the working age population in the total population increased most in the Western Balkans and in certain new EU Member States (such as Lithuania, Poland and Slovakia), thereby boosting the economic growth potential, it declined in the Baltic countries, the Czech Republic and Slovenia. Against this background, the labour contribution to economic growth in the period 2000-14 was, on average, low in CESEE economies, as compared with other fast-growing emerging economies.

**While underlying demographic trends have been heterogeneous overall, all CESEE countries have experienced large emigration flows.** In new EU Member States emigration accelerated after these countries joined the EU. The extent of the outflow of the workforce was particularly high in south-eastern Europe – both in countries that have joined the EU and in countries that have not – while it was lower, but still considerable, in central and eastern Europe and in the Baltic countries. Emigration concerned mostly the young and skilled workforce; this in turn adversely affected productivity and income convergence.[44]

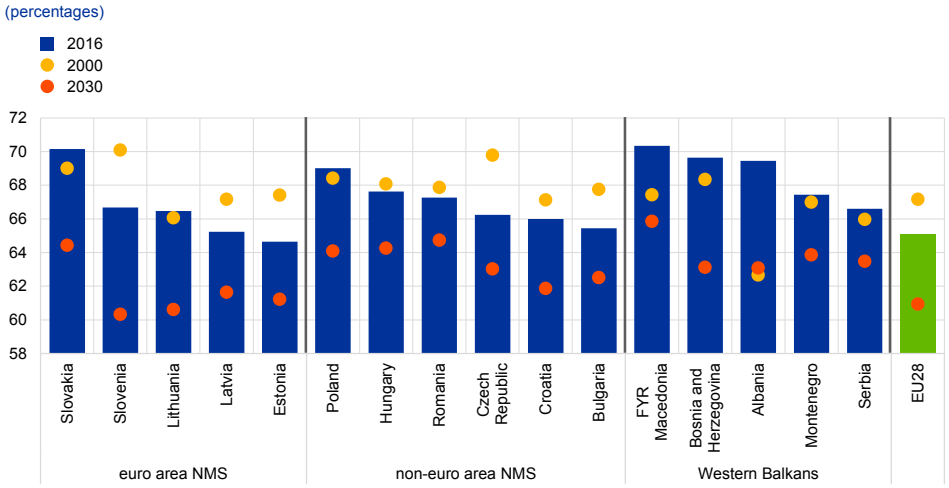
**Looking ahead, the challenges related to the falling share of the working age population are expected to increase due to the acceleration in population ageing (see Chart 10).** Based on current World Bank projections up to 2030, the share of the working age population in the total population is expected to decline in all CESEE countries. Such developments may have considerable implications for

[44] Emigration between 2000 and 2012 reached more than 10% of the 1990 population in south-eastern European countries, and was half that level in central and eastern Europe and in the Baltic countries; see Atoyan, R., Christiansen, L., Dizioli, A., Ebeke, C., Ilahi, N., Ilyina, A., Mehrez, G., Qu, H., Raei, F., Rhee, A. and Zakharova, D., "Emigration and Its Economic Impact on Eastern Europe", IMF Staff Discussion Note SDN/16/07, 2016. This paper concluded that emigration from CESEE countries contributed to the drain of skilled labour and thus lowered productivity growth and slowed economic convergence to the EU level.

economic growth. Most importantly, they are likely to have a direct adverse impact on economic potential through lower labour input to production.[45]

**Chart 10**

Share of the population aged 15-64 in the total population in 2000, 2016 and 2030




Source: World Bank (WDI).
Note: Data for Serbia include Kosovo.

**The potentially negative implications of population ageing and emigration on the labour market could be mitigated by increasing labour market participation.** Although labour market participation rates in the Baltic countries and some central and eastern European countries are already at relatively high levels, there remains significant scope for higher participation in south-eastern Europe, particularly in countries outside the EU.[46] In these countries, participation rates are, on average, 10 percentage points lower than in the EU28, and in many cases they have declined since 2000 (see Chart 11).

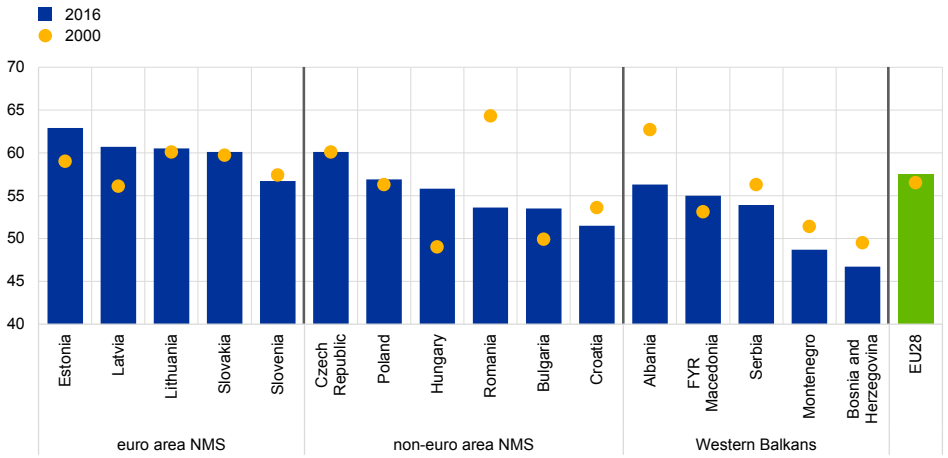
45 At the same time, population ageing may also have indirect effects on economic growth, through its impact on aggregate productivity, saving or the level and structure of public expenditure, although there is still no consensus in the literature on the exact mechanism through which population ageing can affect those variables. It should also be kept in mind that ageing is likely to induce policy and behavioural responses (including the design of pension systems, labour market policies, saving patterns or investment in human or physical capital) that might have an ambiguous impact on economic activity overall.

46 The scope for higher labour market participation is clearly visible when analysing the most vulnerable groups on the labour market, i.e. females and the young and older cohorts.

**Chart 11**

Labour market participation rate in 2000 and 2016

(as a percentage of the total population aged 15 and above)




Sources: World Bank (WDI) data compiled by the International Labour Organization.
Note: Statistical break in Romania in 2002.

**Another potential avenue to mitigate the negative impact of the falling share of the working age population on labour markets is immigration.** Notwithstanding large heterogeneity across the countries analysed, in most of them the number of immigrants in relation to the population remains low.[47] Although in some CESEE economies immigration increased in the period analysed, it was mostly driven by high immigration from other less-developed CESEE countries, which themselves also face future demographic challenges.[48] Furthermore, attracting immigrants requires offering economic opportunities in the labour market; however these tend to be limited in countries that still suffer from relatively high unemployment, notably the Western Balkans.

## 3.4 Drivers of total factor productivity

**This subsection focuses on factors that may have had a tangible impact on total factor productivity in CESEE countries.** Total factor productivity measures the efficiency with which labour and capital inputs are used in the production process and is a key driver of sustainable convergence. There are many factors that can influence this efficiency in the production process and this subsection focuses on the impacts of the economic structure, the role of human capital, trade openness and external competitiveness, and innovation. It also considers the fundamental role played by institutional quality, which, as previously indicated, now features more prominently in the convergence literature.

47 The ratio is 3.3% on average, as compared with 10.6% in the EU28 (with country averages weighted by population, using United Nations data for 2015).

48 For example, the increase in the number of immigrants in Slovenia since 2000 has been largely driven by inflows of citizens of Bosnia and Herzegovina and the former Yugoslav Republic of Macedonia, while in Hungary it has been driven by inflows of citizens of Romania and Serbia. In recent years, Poland has seen an unprecedented inflow of Ukrainian citizens.

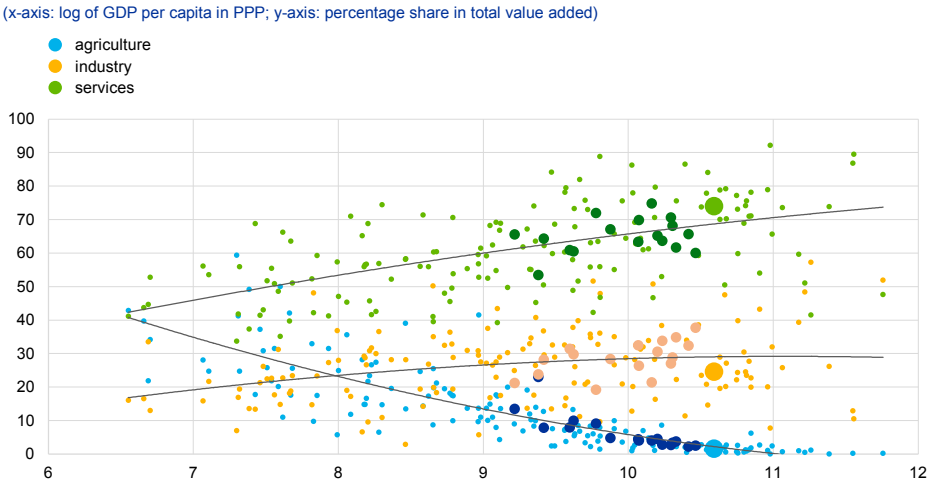
### 3.4.1 Economic structure

**Due to differing productivity levels across economic sectors, the structure of an economy has a direct impact on its aggregate productivity and economic growth.** In all CESEE countries the role of services and/or industry in the economy has increased since 2000, while in parallel the role of agriculture has gradually declined. This has been accompanied by labour reallocation from agriculture to other economic sectors. Such restructuring – typical of catching-up economies – has supported growth, given that productivity in agriculture is usually lower than in other sectors. In some countries, the restructuring was particularly large. For instance, in Albania, the share of employment in agriculture in total employment fell from around 54% in 2000 to 42% in 2016, in Romania it fell from around 45% to 26%, and in Lithuania, from around 19% to 9%.

**CESEE economies with the highest levels of GDP per capita appear to be more industrialised than other economies at a similar stage of development (see Chart 12).** In those more industrialised economies, the relative strength of the industrial sector may be explained by the reallocation of production from western Europe, driven by high FDI inflows, increasing participation in global value chains, lower labour costs and the proximity to more advanced EU economies. At the same time, some CESEE countries are less industrialised than their GDP per capita levels might imply. This is particularly the case for countries in the Western Balkans where agriculture still plays an important role.

**Chart 12**

Share of agriculture, industry and services in total value added in 170 economies in 2016



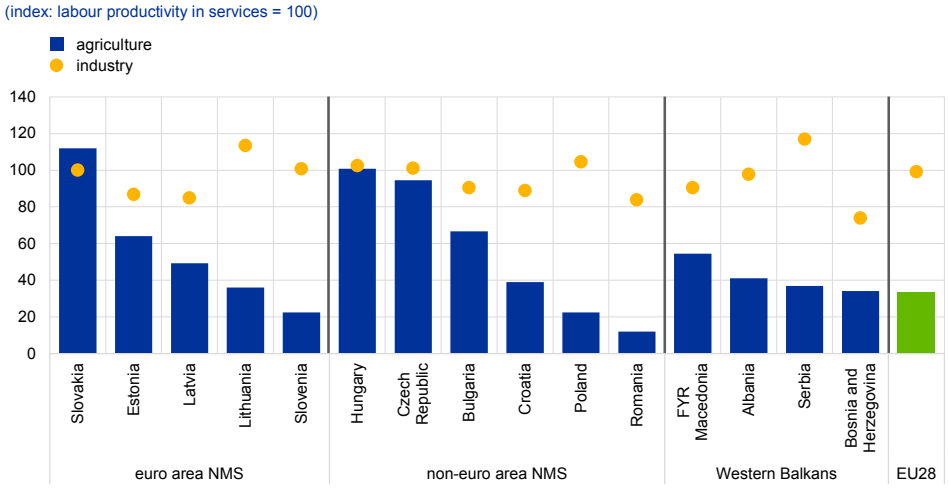

Sources: World Bank (WDI) and Organisation for Economic Co-operation and Development (OECD).
Notes: The darker colours denote CESEE countries and the largest dots, the EU28 average. Data refer to 2015 for 16 countries.

**Notwithstanding the positive trends, significant scope remains for further labour reallocation towards services and industry in many CESEE countries.** While in some countries the share of employment in agriculture has already reached the low levels typical of advanced economies (this applies particularly to the Czech

Republic, Estonia and Slovakia), in others it remains high (in particular, Albania and Romania), thus acting as a drag on overall productivity (see Chart 13).

**Chart 13**

Labour productivity in industry and agriculture in 2016




Sources: IMF (World Economic Outlook), World Bank (WDI) and ECB calculations.
Note: Kosovo and Montenegro have been excluded due to data availability issues.

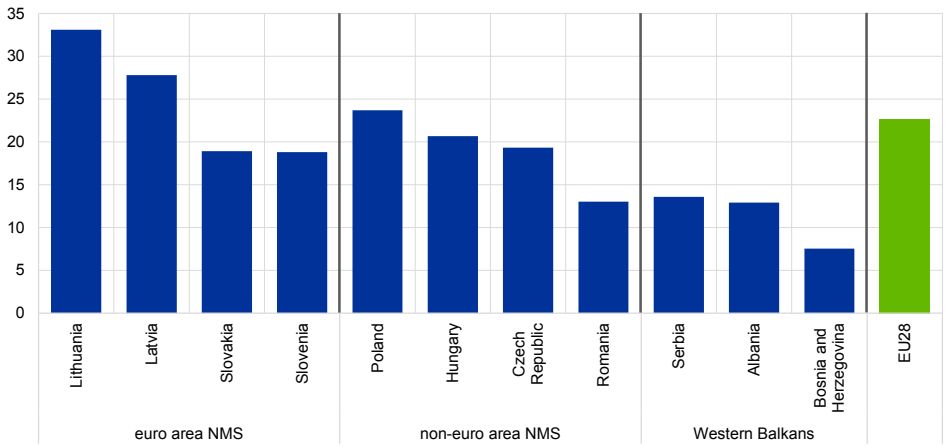
### 3.4.2 Human capital

**Human capital levels in CESEE countries appear to be relatively high overall.** Although human capital is not directly observable, it can be approximated by variables such as the percentage of the workforce with a higher education or the rates of enrolment in education. On the basis of these metrics most CESEE countries score relatively well compared with the EU average. In particular, the share of the population with at least a bachelor's degree in Lithuania, Latvia and Poland remains higher than the EU average (see Chart 14). At the same time, significant gaps persist in the Western Balkans and in some EU Member States (e.g. Romania), where the share of the population with at least a bachelor's degree remains very low. Enrolment in tertiary education has increased in all CESEE countries since 2000, pointing to an increase in human capital among younger generations which may give a boost to productivity and economic growth going forward.

**Chart 14**

Share of the population with at least a bachelor's (or equivalent) degree in 2015

(as a percentage of the population aged 25 or older)




Sources: World Bank (WDI) and ECB calculations.
Notes: Data are not available for all CESEE countries. Data refer to 2014 for Poland and Romania and to 2012 for Albania. The EU average is calculated from all countries for which data are available.

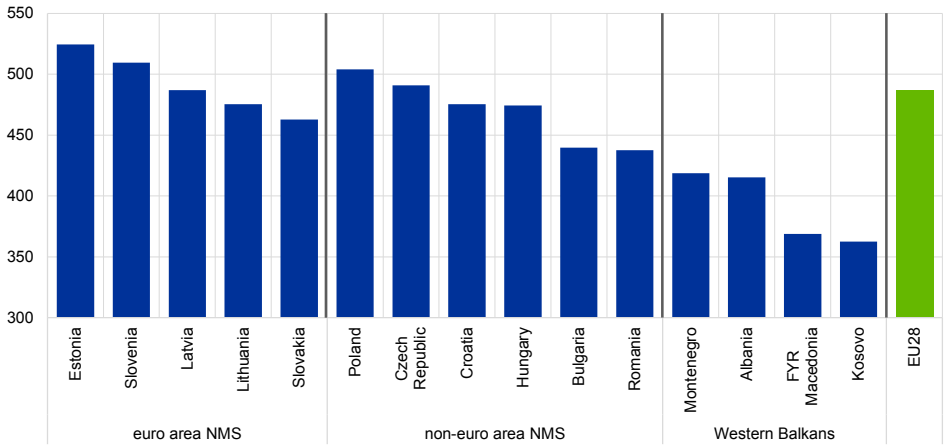
**Challenges related to the quality of education and the alignment of skills with labour market needs persist in many CESEE economies.** In this context, PISA (Programme for International Student Assessment) scores, showing how 15-year-old students perform in terms of mathematics, reading and science skills, point to a lower quality of education in the Western Balkans and in south-eastern European countries that have already joined the EU (see Chart 15). Conversely, students in the Baltic countries and some central and eastern European countries perform relatively well, pointing to a higher quality of education. At the same time, the alignment of skills with labour market needs remains weak in most CESEE economies; this is contributing to a mismatch in the labour market and to higher unemployment, particularly in the Western Balkans.[49]

[49] See also "Central, Eastern, and Southeastern Europe: How to Get Back on the Fast Track", Regional Economic Issues, IMF, May 2016.

**Chart 15**

PISA average score in mathematics, reading and science in 2015 (age 15 years)

(higher score indicates better performance)




Sources: OECD and ECB calculations.

### 3.4.3 Trade openness and external competitiveness

**Trade openness has increased in almost all countries in the CESEE region since 2000, creating favourable conditions for income convergence in these economies.**[50] The most developed or fast-converging CESEE economies (such as the Czech Republic, Estonia, Lithuania, Slovenia and Slovakia) also display high trade openness. However, a high degree of trade openness may not be sufficient to achieve a sustainable convergence process, particularly if it is not accompanied by improving competitiveness.

**CESEE countries that have joined the euro area have experienced the fastest growth in trade openness since 2000 (see Chart 16).** At the same time, the increase in trade openness in EU Member States outside the euro area was more gradual, which might however also reflect the larger size of those economies. By contrast, trade openness in the Western Balkans has grown only moderately and remains much lower than the EU average. A much faster growth in exports than in imports was a common characteristic in all countries in the region. Against this background, almost all new EU Member States managed to turn trade deficits in 2000 into trade surpluses by 2016. However, in the Western Balkans, notwithstanding that exports have generally grown faster than imports since 2000, large external trade deficits still persist. While significant trade deficits are typical of catching-up economies – which also usually attract capital inflows – large trade

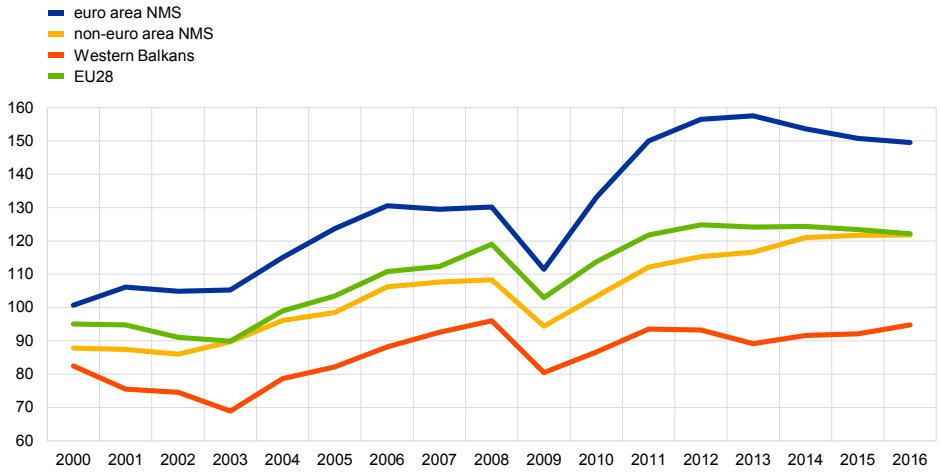
50 Trade openness allows for a reorientation of resources towards more productive sectors. It also encourages innovation and creates opportunities for small economies to access new markets. Increasing trade openness might also pose challenges related to, for example, labour reallocation from import-competing sectors and countries might become trapped in the production of goods and services in which they display comparative advantages, e.g. low-skill and labour-intensive products. For a more extensive review of the challenges related to trade openness, see, for example, Rodriguez, F. and Rodrik, D., "Trade Policy and Economic Growth: A Skeptic's Guide to the Cross-National Evidence", NBER Macroeconomics Annual 2000, Vol. 15, 2001, pp. 261-338.

imbalances in some Western Balkan countries may also be a sign of a narrow production base and the generally low competitiveness of the countries in the region.

**Chart 16**

Trade openness in the period 2000-16

(sum of exports and imports of goods and services as a percentage of GDP)



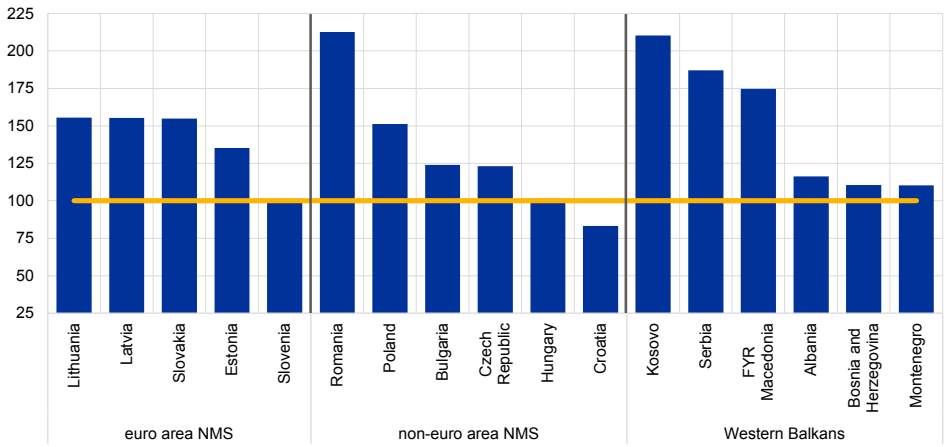

Sources: IMF (World Economic Outlook) and ECB calculations.
Note: Data for Montenegro are available only from 2001 onwards.

**Changes in world export market shares – an indication of the ability to compete in global markets – remain heterogeneous in CESEE countries (see Chart 17).** Romania, Serbia and the former Yugoslav Republic of Macedonia, on the one hand, managed to significantly increase their share in world merchandise exports, although several of them started from the position of a relatively closed economy with low export levels. The Baltic countries, on the other hand, experienced an impressive boost to exports in the years prior to the global financial crisis in 2008-09, although the increase moderated thereafter. Hungary, which displays one of the highest trade openness ratios, has not been able to increase its share in global exports, suggesting little progress in competitiveness. The main export market of CESEE economies has traditionally been the EU, accounting, on average, for 70% of merchandise exports. However, export destinations have become more diversified over the past decade and intra-regional trade has increased.

**Chart 17**

Change in world export market shares from 2004 to 2016

(index: 2004 = 100)



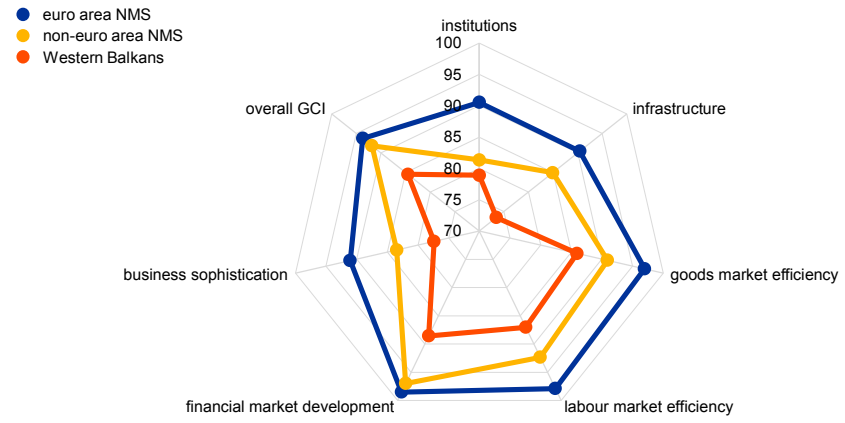

Sources: IMF (World Economic Outlook) and ECB calculations.
Note: The base year is 2004 due to a lack of data for some countries in the sample.

**External competitiveness indicators suggest that most CESEE economies score worse than the EU average on many metrics, despite improvements over the past decade (see Chart 18).** While marked heterogeneity persists across the individual countries, overall the CESEE region appears to have particular weaknesses in infrastructure quality, business sophistication, and institutions. The performance of the Western Balkan economies is especially weak against all of these metrics. This remains a matter of concern for these countries, in particular where the nominal exchange rate is prevented from properly reflecting domestic developments or helping to restore price competitiveness.

**Chart 18**

Global Competitiveness Index 2017-18

(index: EU28 average = 100)




Sources: World Economic Forum (Global Competitiveness Index) and ECB calculations.
Notes: The Global Competitiveness Index (GCI) is calculated on the basis of 12 sub-indicators, of which six are depicted. A higher score indicates a better relative performance.

### 3.4.4 Innovation

**Innovation is a fundamental factor in competing in global markets with higher value-added products and thus successfully converging towards more advanced economies.** While low-income countries may be able to converge quickly mainly by accumulating capital and labour and importing technologies and know-how (through capital goods imports or FDI), achieving sustainable convergence may be inhibited by an inability to shift from labour-intensive production to more innovative and more technologically advanced production. Without such a structural shift, countries risk becoming stuck in the "middle-income trap" (see Box 3). In the context of CESEE countries – both those that have joined the EU and the current EU candidates and potential candidates – enhancing innovation (and productivity) appears to be fundamental also in the context of European integration and the ability to compete in the Single Market.

**While in recent years some CESEE countries have managed to catch up gradually in terms of innovation relative to the EU, others have stalled or even somewhat backtracked.** Looking at the number of patent applications per million of population as a proxy for innovation, this indicator has improved notably in the Baltic countries, Poland and Slovenia since 2000.[51] The heterogeneous development of innovation in CESEE countries suggests that innovation gains are not automatic and may require the pursuit of innovation-supporting policies.

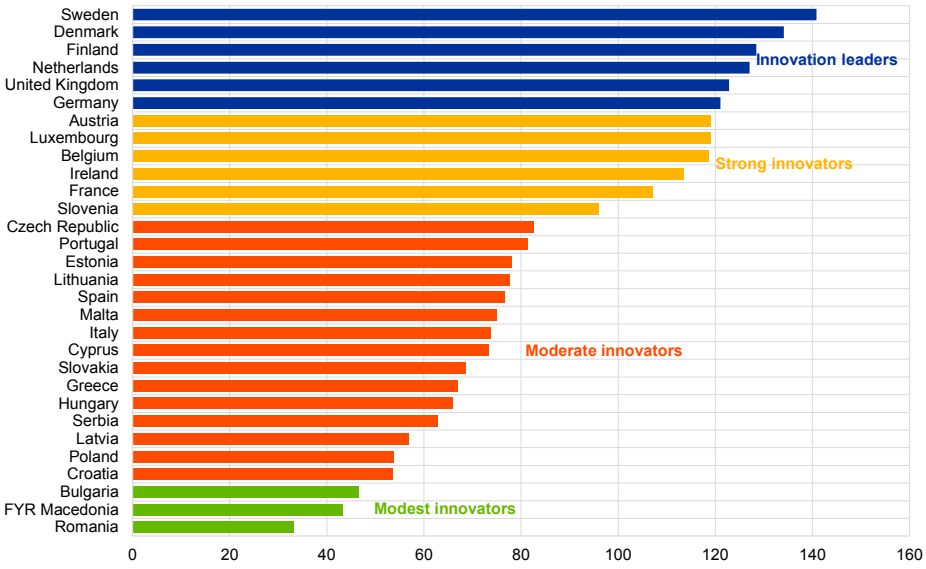
**There remains significant scope for improvement in innovation among most CESEE countries, in particular in south-eastern Europe.** According to the European Innovation Scoreboard – which classifies economies according to their innovation performance based on a number of metrics – only Slovenia is ranked as a strong innovator, while most CESEE economies are classified as moderate innovators and some – usually those from south-eastern Europe – are classified as only modest innovators (see Chart 19). The strengths of CESEE economies include human resources and an innovation-friendly environment overall (typically in central and eastern Europe and in the Baltic countries). However, these economies lag behind in terms of research quality, small and medium-sized enterprise (SME) innovation (related to products, processes, marketing and organisation), linkages between innovative SMEs and research, linkages between the private and public sectors, and levels of intellectual assets (measured by, for example, patent applications).

[51] According to World Intellectual Property Organization data.

**Chart 19**

European Innovation Scoreboard in 2016 for CESEE and other European economies

(as a percentage of the EU28 average)




Source: European Commission (European Innovation Scoreboard).
Note: Data are available only for some CESEE economies.

## Box 3
## The middle-income trap

**Prepared by Piotr Żuk, Eva Katalin Polgar, Li Savelin, Juan Luis Diaz del Hoyo and Paul König**

Since the 1960s only a few economies have managed to achieve a sustainable convergence in real GDP per capita from low/middle income to high income (these include Hong Kong, Ireland, Japan, South Korea, Singapore and Taiwan). Many low-income countries managed to reach middle-income status, but failed to continue to converge to high-income status thereafter, thus inspiring a discussion on the so-called "middle-income trap". According to the hypothesis, after reaching middle-income status economies follow a lower growth trajectory, which prevents them from achieving higher income levels. This slowdown in economic growth is often associated with, inter alia, unfavourable demographics and a fall in investment rates from previously high levels – the latter suggesting an over-reliance of GDP growth on capital accumulation at the early stage of catching-up. The slowdown is less likely in middle-income economies with higher levels of human capital and where high-technology products account for a relatively large share of exports.[52]

The middle-income trap is usually explained by the observation that the initial advantages of a catching-up economy may disappear once a certain level of development has been reached. In particular, at an early stage of development low-income countries may achieve high GDP growth relatively easily due to low labour costs (therefore being highly competitive in global markets when

[52] The slowdown typically happens after the countries reach USD 10,000-11,000 and USD 15,000-16,000 GDP per capita in 2005 PPP dollars. See Eichengreen, B., Park, D. and Shin, K., "When Fast Growing Economies Slow Down: International Evidence and Implications for China", NBER Working Paper No 16919, 2011, and Eichengreen, B., Park, D. and Shin, K., "Growth Slowdowns Redux: New Evidence on the Middle-Income Trap", NBER Working Paper No 18673, 2013.

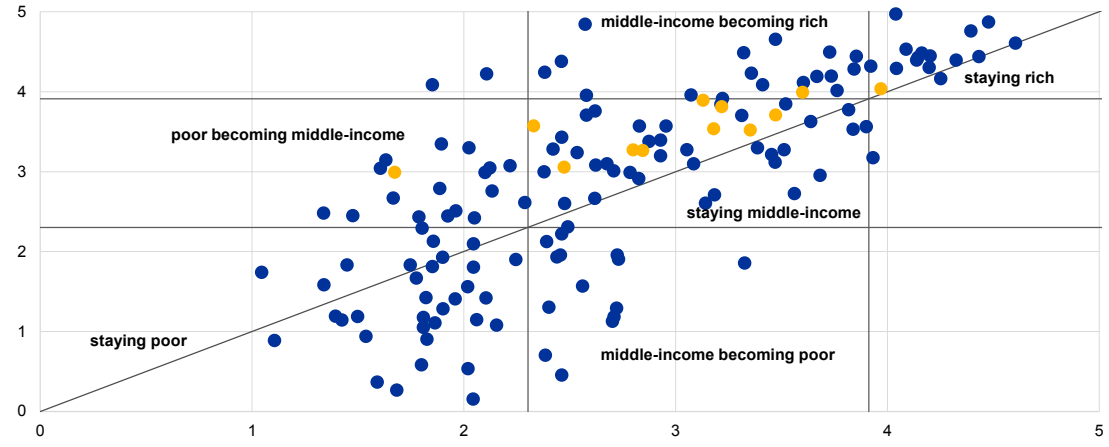
producing labour-intensive goods), to labour reallocation from lower to higher productivity sectors (e.g. from agriculture to manufacturing) and to the import of advanced technologies. However, once wages increase to international levels (thereby hampering external competitiveness) and the sectoral reallocation of labour has been largely completed, further productivity and economic growth gains require a shift from labour-intensive production towards more innovative and technologically advanced production. As this shift remains challenging once a country reaches middle-income levels, many countries fail to converge further.[53]

Analysis of a large set of countries over a longer time perspective shows that evidence supporting the middle-income trap hypothesis is, however, mixed (see the chart). Although only a small number of the middle-income countries have managed to join the high-income group since 1960, many of them have been able to narrow their distance from the most developed economies.

**Chart A**

GDP per capita in 1960 and 2016 in 147 economies

(x-axis: log of GDP per capita relative to the United States in 1960; y-axis: log of GDP per capita relative to the United States in 2016)




Sources: Maddison Project Database (2018 version) and Bolt, J., Inklaar, R., de Jong, H. and van Zanden, J.L., "Rebasing 'Maddison': new income comparisons and the shape of long-run economic development", Groningen Growth and Development Centre Research Memorandum, Vol. GD-174, 2018.
Notes: "Middle income" is defined arbitrarily as the income between 10% and 50% of the US GDP per capita. The yellow dots represent CESEE economies for which data are available. A similar chart can be found in Agénor, P.R., Canuto, O. and Jelenic, M., "Avoiding Middle-Income Growth Traps", Economic Premise Number 98, World Bank, 2012.

Since 2000 some of the CESEE countries (for example Lithuania, Poland and Romania) have experienced particularly fast convergence and there are no apparent signs of a slowdown in the pace of the catching-up process. At the same time, other CESEE EU Member States have found it difficult to converge to the EU28 average beyond the levels already achieved up to 2008. Given these heterogeneous developments, it appears that while for some CESEE countries the middle-income trap hypothesis can be dismissed (at least given their experience so far), in others the signs of a slowdown in convergence after reaching a certain level of income are visible.[54]

53 See for example Agénor, P.R., Canuto, O. and Jelenic, M., "Avoiding Middle-Income Growth Traps", Economic Premise Number 98, World Bank, 2012.

54 It should be emphasised that a slowdown may take place at different levels of development. For example, some CESEE countries which experienced a slowdown in convergence are already classified as high-income countries (according to the World Bank classification). However, the factors which might be holding back further convergence might be similar to those for countries classified as middle income, and thresholds for income classifications are to some extent arbitrary.

### 3.4.5 Institutional quality

**The quality of institutions is seen as a fundamental explanation of economic growth and of differences in economic development across countries in the long run.**[55] Accordingly, among CESEE countries one can also observe a strong correlation between the quality of institutions and the level of GDP per capita. Although institutions are endogenous, meaning that they are determined by a society and may be a function of its income, their improvement does not necessarily occur automatically as economic development progresses.

**Changes in institutional quality in the CESEE region in recent decades need to be analysed in the context of the transition of these countries from command economies to market economies.** While the transition in new EU Member States was rather rapid and took place mostly at the beginning of the 1990s, the pace of the transition in the Western Balkans was much slower. This was largely due to the "lost decade" after the Yugoslav wars, which led to a delay in the implementation of reforms. Thus, most Western Balkan economies only achieved a relatively advanced degree of transition in the areas of privatisation and price liberalisation in the early or mid-2000s, according to the EBRD transition indicators. However, in several domains (in particular competition policy and corporate governance) further market reforms are still required.

**Along with the transition to a market economy, institutions in CESEE countries became more supportive of growth.** In recent decades, most CESEE economies have managed to improve considerably in areas such as control of corruption, rule of law, government effectiveness and regulatory quality. The fastest improvement took place in some of the Western Balkan economies, although from very low levels, as well as in the countries that had already joined the euro area.

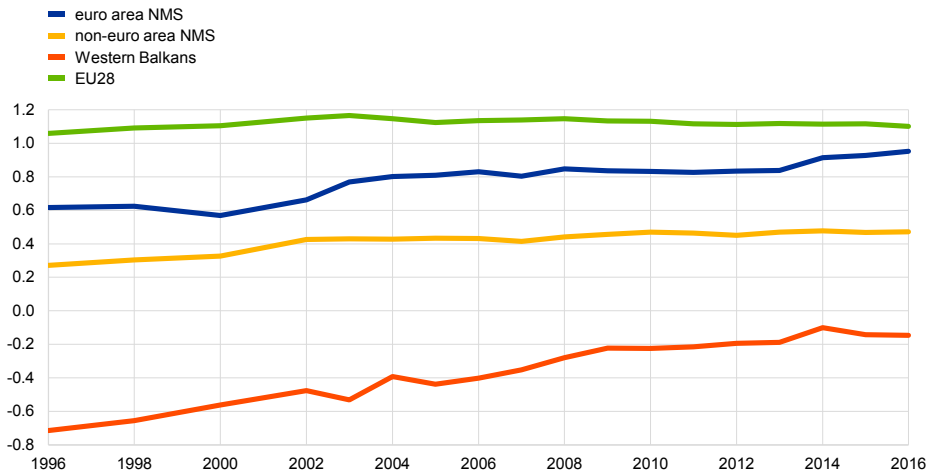
**However, in most CESEE countries there remains a significant difference in institutional quality compared with the average level observed in the EU.** In particular this concerns the Western Balkans, where institutional quality remains particularly low due to (inter alia) higher corruption, weaker rule of law and lower regulatory quality, while the business environment is to a large extent hampered by weaknesses in enforcing contracts, resolving insolvency and registering property. Furthermore, it is also noteworthy that the improvements seen in governance indicators in non-euro area new EU Member States since the mid-1990s seem to have stalled in recent years, in clear contrast to the situation of the CESEE countries that joined the euro area (see Chart 20).

[55] On the role of institutions in convergence and economic growth, see Box 2 of this article, entitled "Theories of convergence and economic growth".

**Chart 20**

Worldwide Governance Indicators (delivery index)

(synthetic index based on average scores across four sub-indicators)



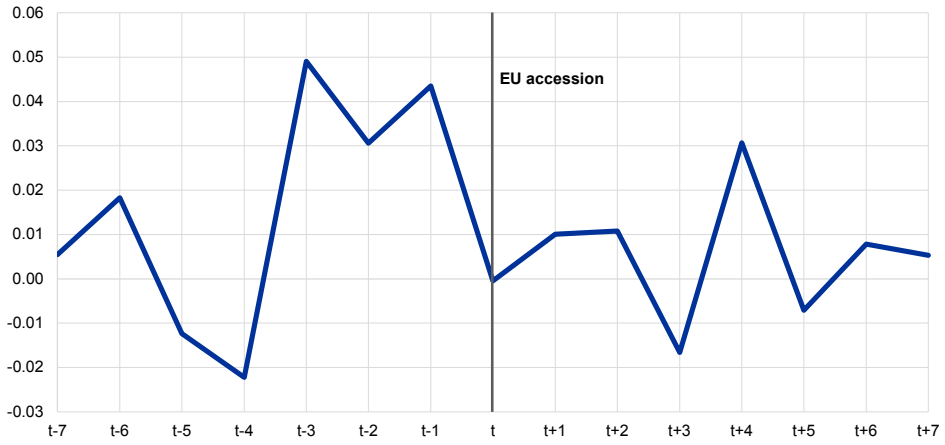

Sources: World Bank (Worldwide Governance Indicators – WGI) and ECB calculations.
Notes: The WGI delivery index is a simple average of the sub-indicators regulatory quality, government effectiveness, control of corruption and rule of law. A higher index implies a better relative performance in institutional quality.

**EU accession constitutes an important anchor for institutional reforms.** As can be seen in Chart 21, in new EU Member States the most significant efforts to improve institutional quality took place in the years prior to EU accession, while progress since then has been limited in many of them, in particular in the countries that remained outside the euro area. For this latter group of countries, efforts aimed at strengthening institutional quality would be conducive not only to accelerating real convergence, but also to abiding by the economic criteria for Monetary Union membership laid down in the Treaty. These criteria include price stability and fiscal policy soundness, which support long-term growth and macroeconomic stability and enhance resilience to economic shocks.

**Chart 21**

Average annual change in the Worldwide Governance Indicators (delivery index) in new EU Member States relative to the year of EU accession

(higher score indicates better performance)




Sources: World Bank (Worldwide Governance Indicators – WGI) and ECB calculations.
Notes: The WGI delivery index is a simple average of the sub-indicators regulatory quality, government effectiveness, control of corruption and rule of law.

**On average, the CESEE countries that have joined the euro area have also maintained the positive reform momentum in recent years.** As a result, institutional quality in these countries has converged close to the EU average. This is a positive development, given the more favourable growth prospects associated with a better quality of institutions and the fact that strong institutions remain crucial to ensuring the sustainability of convergence.

**Similarly, the quality of institutions also remains a fundamental factor for the EU accession process in the Western Balkans.** Further strengthening the institutional quality in these countries remains essential not only for creating favourable conditions for economic growth, but also for complying with the Copenhagen criteria for EU accession. These criteria include the stability of institutions guaranteeing democracy and the rule of law, the existence of a functioning market economy and the capacity to cope with competitive pressure and market forces within the EU. In turn, EU accession prospects might create an anchor for the reform momentum in these countries conducive to enhancing institutional quality, as was the case for countries in the region that have already joined the EU.

## 4 Conclusions

**CESEE economies have managed to narrow their gaps to the EU average in terms of GDP per capita in the period analysed in this article (i.e. since 2000).** This has obvious positive welfare implications for these countries and constitutes a positive development in the context of economic and monetary integration with, and within, the EU. However, the pace of convergence has been heterogeneous across countries.

**Most CESEE countries that have joined the EU have been converging relatively quickly and a few of them have already reached GDP per capita levels that are close to the EU28 average.** In this respect, EU accession has been an important anchor in the convergence process, particularly in the pre-accession years. The fastest pace of convergence has been observed in some of the countries that have joined the euro area (in particular the Baltic countries and Slovakia), as well as in some non-euro area EU Member States, such as Poland. The pace of convergence of those Western Balkan economies which have a prospect of joining the EU has been, on average, slower, and their distance to EU economies in terms of income levels remains substantial. In most CESEE countries the catching-up was more dynamic before the 2008-09 global financial crisis; after the crisis, convergence to the EU level slowed in most countries amid weaker TFP growth and capital accumulation.

**The most successful CESEE economies in terms of the pace of convergence share certain common characteristics.** First, most of them considerably improved institutional quality. Second, they increased external competitiveness amid rising trade openness and innovation. Third, most of them experienced relatively favourable demographic developments, or significantly increased their labour market participation rates. The fastest-converging economies also exhibited very significant improvements in human capital levels, or their levels of human capital were already among the highest in the region. Investment rates also tended to be higher, as compared with peers.

**Looking ahead, CESEE countries face several challenges in the convergence process.** These include further improving institutional quality, reorienting their economies towards more innovative production, reinvigorating investment and ensuring its sustainability, and addressing the adverse impact of population ageing. While some of these challenges are more difficult to address through dedicated policies than others, domestic policymakers should pay attention to them in an endeavour to continue, and possibly accelerate, the process of catching up with the EU.

# 2 The impact of the corporate sector purchase programme on corporate bond markets and the financing of euro area non-financial corporations

**Prepared by Roberto A. De Santis, André Geis, Aiste Juskaite and Lia Vaz Cruz**

*This article reviews the impact of the ECB's corporate sector purchase programme (CSPP) on corporate bond markets and the financing of euro area non-financial corporations (NFCs). It finds that the CSPP has led to a significant easing in financing conditions for euro area NFCs, including declines in corporate bond spreads, improved supply conditions in the corporate bond primary market and increased bank lending to NFCs that do not have access to bond-based financing. The operational set-up of the CSPP, in particular its flexibility and adaptability, minimises any impact that could be detrimental to the functioning of the corporate bond market.*

## 1 Introduction

**The CSPP forms part of the ECB's asset purchase programme (APP). Its purpose is to ease financing conditions in the real economy.** In broad terms, the CSPP consists of purchases by the Eurosystem of investment-grade euro-denominated bonds issued by non-bank corporations (i.e. NFCs and insurance corporations) established in the euro area. The CSPP helps businesses across the euro area to gain better access to credit, boost investment, create jobs and thereby support overall economic growth. This is a precondition for inflation to return to, and stabilise at, levels below, but close to, 2% over the medium term.

**The CSPP was announced on 10 March 2016 and purchases started on 8 June 2016.** At the time of the announcement, euro area annual HICP inflation was slightly negative and real GDP growth was relatively weak, with risks to the outlook tilted to the downside. The Governing Council decided in March 2016 on a set of policy measures in pursuit of its objective of price stability, including: (i) a further reduction in key ECB interest rates (the deposit facility rate was cut by 10 basis points from -0.3% to -0.4%); (ii) a new series of four targeted longer-term refinancing operations (TLTROs) starting in June 2016, each one with a maturity of four years; (iii) an increase in the monthly net asset purchases under the APP from €60 billion to €80 billion; and (iv) the CSPP. This comprehensive package was aimed at exploiting the synergies between the different instruments. It was calibrated to further ease financing conditions, stimulate new credit provision and thereby reinforce the economic recovery and accelerate the return of inflation to levels below, but close to, 2%.

At its meeting on 26 October 2017, at which the APP measures were re-calibrated, the Governing Council confirmed that purchases under the APP are intended to run until the end of September 2018, or beyond, if necessary, and in any case until the Governing Council sees a sustained adjustment in the path of inflation consistent

with a return to price stability. In addition, the Governing Council announced that the Eurosystem anticipates that the purchase volumes under the three private sector purchase programmes (the ABSPP, the CBPP and the CSPP) will remain sizeable. Currently, the book value of the Eurosystem's CSPP holdings stands at around €150 billion, which constitutes about 6% of the total APP.

**A broad range of corporate bonds are eligible for purchase under the CSPP, including issues of smaller size.** The Eurosystem purchases securities issued by non-bank corporations in both the primary and the secondary market. To be eligible for purchase, securities must at least be eligible as collateral for Eurosystem refinancing operations. This means that they must meet the minimum requirement of a credit assessment of credit quality step 3 on the Eurosystem's harmonised rating scale (which is equivalent to a minimum first-best long-term credit rating from an external credit assessment institution of BBB-, i.e. investment grade). In addition to being eligible as ECB collateral, the securities purchasable under the CSPP must also be denominated in euro,[56] the remaining maturity of the securities must range from a minimum of 6 months to a maximum of 31 years at the time of purchase, and the securities must be issued by a non-bank corporation established in the euro area. Securities issued by credit institutions are not eligible. The absence of a minimum issuance volume for debt instruments to be eligible under the CSPP ensures that even bonds issued by small firms, which often issue small volumes of debt securities, can also be purchased. Purchases of eligible debt instruments with a negative yield to maturity are also permissible, as long as the yield to maturity is above the deposit facility rate at the time of purchase. The Eurosystem applies an issue share limit of 70% per security.[57]

**This article assesses the impact of the CSPP on the financing conditions for euro area NFCs and its implications for corporate bond market functioning and liquidity conditions.** Section 2 analyses the impact of the CSPP on corporate finance in the euro area by analysing the effects of the CSPP on (i) corporate bond spreads, (ii) primary bond market issuance, (iii) the capital structure of euro area NFCs and (iv) wider NFC financing conditions. Section 3 investigates the implications of the CSPP for the functioning of the euro area corporate bond market. Section 4 concludes.

56 Foreign currency-denominated debt instruments are also accepted as eligible collateral on a temporary basis.

57 Lower issue share limits apply in specific cases, for example for securities issued by public undertakings, which are dealt with in a manner consistent with their treatment under the public sector purchase programme (PSPP). In relation to public undertakings, the Eurosystem is bound by the monetary financing prohibition in Article 123 of the Treaty on the Functioning of the European Union (TFEU).

# 2 Impact on corporate financing

## 2.1 Impact on the cost of financing for euro area NFCs

**Developments in the spreads between corporate bond yields and risk-free rates provide useful information on the impact of the CSPP.** The analysis of corporate bond spreads enables us to assess the effects of the CSPP on NFC bond market-based financing costs in isolation, whereas the other non-standard monetary policy measures announced by the ECB in March 2016 are likely to have contributed to lowering corporate bond yields by reducing the level of risk-free rates.

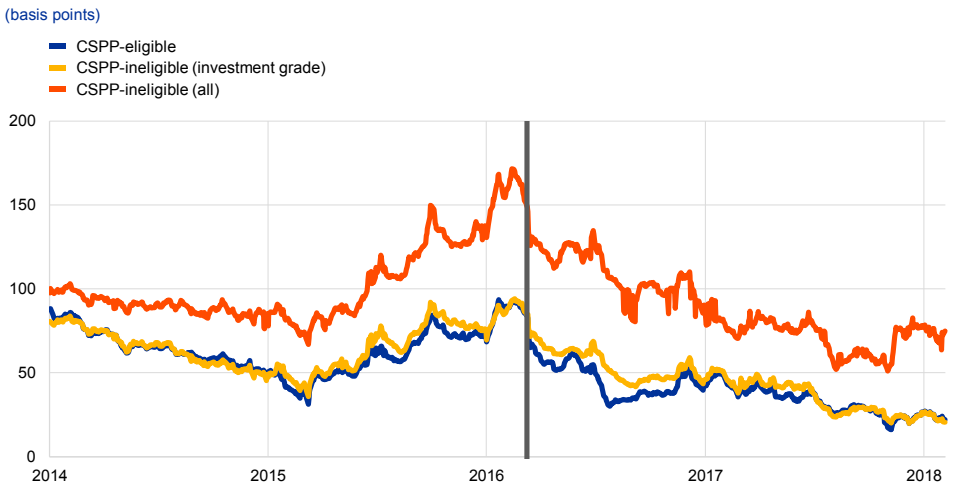
**Corporate bond spreads have steadily tightened since the announcement of the CSPP in March 2016 (see Chart 1).**[58] In the year leading up to the announcement, spreads had widened distinctly. The subsequent narrowing is an initial indication that financing conditions for NFCs have improved as a result of the March 2016 monetary policy measures. Moreover, spreads have narrowed not only for CSPP-eligible bonds, but also for corporate bonds that are not eligible for purchase under the CSPP (e.g. bonds issued by banks, high-yield bonds and bonds with an ineligible coupon structure[59]) owing to spillovers from the CSPP and – more broadly – the APP and other monetary policy measures. As yields and spreads of bonds purchased by the Eurosystem decline, investors have an incentive to rebalance their portfolios towards assets with similar risk characteristics that are expected to provide better returns.

58 The corporate bond spread is measured by the Z-spread, which is the spread over the euro interbank offered rate (EURIBOR) curve required to discount a pre-determined cash flow. Z-spreads are primarily driven by the credit quality of the issuer and are economically comparable to bond yield-to-maturity spreads.

59 Bonds with a coupon structure that is contingent on the issuer's discretion are not eligible. Purchases under the CSPP are restricted to coupon structures that are not subject to the issuer's discretion throughout the lifetime of the asset, based on both a forward-looking and a backward-looking perspective.

**Chart 1**

Corporate bond spreads – eligible versus ineligible




Sources: Bloomberg and ECB calculations.
Notes: The indices include only senior unsecured bonds. The vertical line marks the announcement of the CSPP on 10 March 2016. Corporate bond spreads are measured by the Z-spread. The latest observations are for 5 February 2018.

**Econometric analysis attributes a significant part of the decline in spreads since March 2016 to the CSPP.** Controlling for other determinants of corporate spreads, in particular the bond-specific credit risk, empirical evidence suggests that, relative to the pre-CSPP period between 1 April 2015 and 9 March 2016,[60] in the subsequent period between 10 March 2016 and the end of December 2017, the CSPP accounted for a decline in corporate bond spreads of, on average, 25 basis points for eligible bonds, 10 basis points for ineligible investment-grade bonds and 20 basis points for all ineligible bonds. For eligible bonds, the CSPP can be credited with almost the entire decline in spreads since the announcement of the programme (see Chart 2).[61] A controlled event study[62] which focused on the two weeks following the CSPP announcement provides further support for these findings. It suggests that the CSPP announcement accounted for a large share of the decline in corporate bond spreads over this period. In addition, the two-week decline in spreads was larger for eligible NFC bonds than for ineligible bank bonds. Similarly, ineligible high-yield bonds, despite showing a larger absolute decline in their spreads,[63] showed a smaller relative decline than eligible NFC bonds when compared with their levels before the announcement of the programme. Other studies concentrating on

60 Before 1 April 2015 the largest impact on asset prices came from the PSPP. Therefore, the econometric analysis focuses on the period after that date.

61 The results are based on a panel data analysis in which (the log of) corporate bond spreads of individual euro-denominated bonds issued in the European Union are disaggregated into their driving factors over the daily period from April 2015 to December 2017. Bond-specific credit risk and other term premia are estimated using bond-specific time-varying credit ratings, coupon rates, outstanding amounts and firm characteristics, such as distance to default. Aggregate demand factors are controlled for using country-specific time-fixed effects and sector-specific fixed effects.

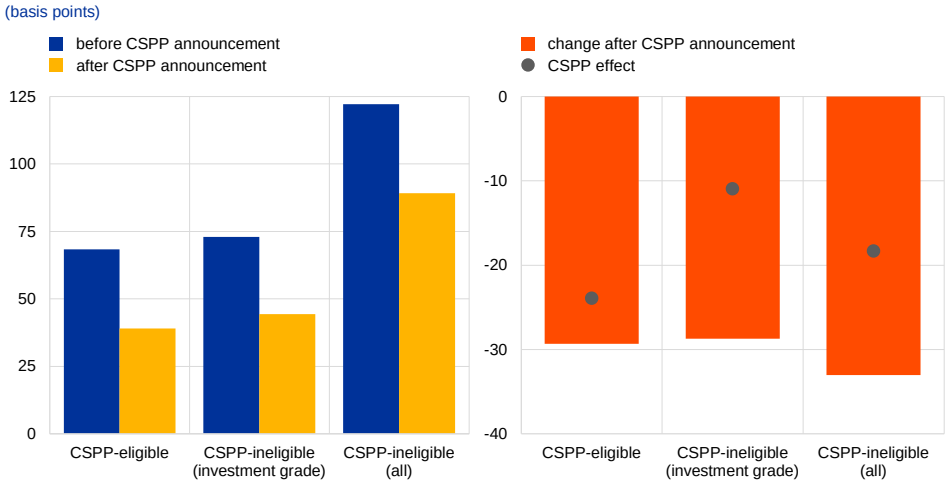
62 See the box entitled "The corporate bond market and the ECB's corporate sector purchase programme", *Economic Bulletin*, Issue 5, ECB, 2016.

63 See Abidi, N. and Miquel-Flores, I., "Who benefits from the corporate QE? A regression discontinuity design approach", *Working Paper Series*, No 2145, ECB, April 2018.

the primary bond market[64] and the credit default swap (CDS) market[65] come to similar conclusions.

**Chart 2**

Corporate bond spreads before and after the CSPP announcement




Sources: Bloomberg and ECB calculations.
Notes: The indices include only senior unsecured bonds. In the left panel, the blue bars denote average spreads between 1 April 2015 and 9 March 2016 and the yellow bars denote the average spreads between 10 March 2016 and 31 December 2017. Corporate bond spreads are measured by the Z-spread.

**Owing to the narrowing of corporate bond spreads since March 2016, credit risk premia in the financial sector and in the NFC high-yield segment have diminished.** By contrast, for the investment-grade NFC segment, which is covered by the CSPP, the "excess bond premium" (defined as the model-based deviation of corporate spreads from historical regularities, taking into account their risk characteristics)[66], although below its historical average, is significantly above its historical low recorded before the global financial crisis (see Chart 3).

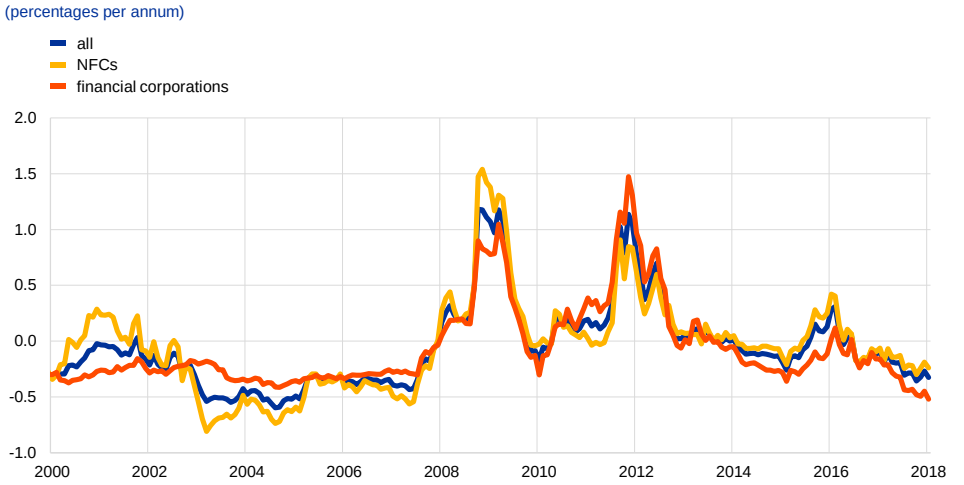
64 See Zaghini, A., "The CSPP at work: yield heterogeneity and the portfolio rebalancing channel", *Working Papers*, No 1157, Banca d'Italia, December 2017.

65 See Cecchetti, S., "A quantitative analysis of risk premia in the corporate bond market", *Working Papers*, No 1141, Banca d'Italia, October 2017.

66 See De Santis, R., "Credit spreads, economic activity and fragmentation", *Working Paper Series*, No 1930, ECB, July 2016.

**Chart 3**

Excess bond premia in the euro area by sector




Sources: Thomson Reuters, Merrill Lynch and ECB calculations.
Notes: The excess bond premium is the deviation of corporate bond spreads relative to the credit risk of the issuer. The latest observations are for 26 January 2018.

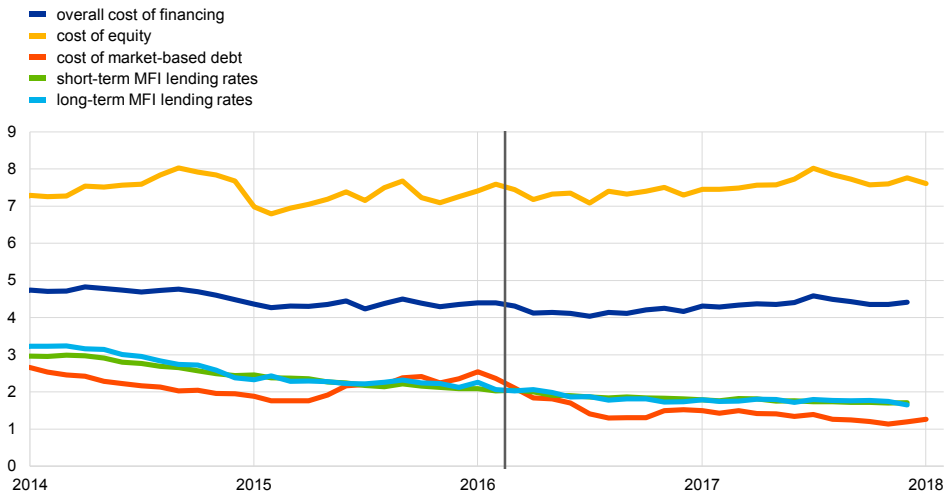
**Over and beyond the intended impact on corporate bond spreads, the CSPP also appears to have had some wider effects on NFC financing conditions (see Chart 4).** The estimated decline in corporate bond spreads that can be directly linked to the CSPP implies only a few basis points decline in the weighted average cost of financing for NFCs, as the debt securities market accounts for only 19.2% of NFCs' outstanding debt and 10.6% of their external financing volume. However, consideration should be given not only to the direct effect of the CSPP in lowering corporate bond spreads, but also to its indirect effects on other elements of NFCs' cost of financing. An indirect metric capturing the cost of financing for corporations is financial conditions indices (FCIs), which are aimed at summarising information about the future state of the economy contained in current financial variables. Empirical analysis suggests that FCIs are strongly influenced by changes in corporate bond spreads, even in cases where corporate bond spreads themselves do not form part of an FCI (see Chart 5).[67]

67 Two FCIs are considered. The Goldman Sachs FCI and an FCI constructed as a weighted average of the one-year overnight index swap (OIS), the ten-year OIS, the nominal effective exchange rate (NEER) of the euro vis-à-vis 38 trading partners and the Dow Jones EURO STOXX broad stock exchange index. The vector autoregression (VAR)-based weights are derived from the cumulative impulse response of HICP inflation to a shock in each of the four financial variables at a 12-month horizon gleaned from VARs which include one indicator at a time and a number of macroeconomic control variables.

**Chart 4**

Nominal cost of external financing for NFCs

(percentages per annum)

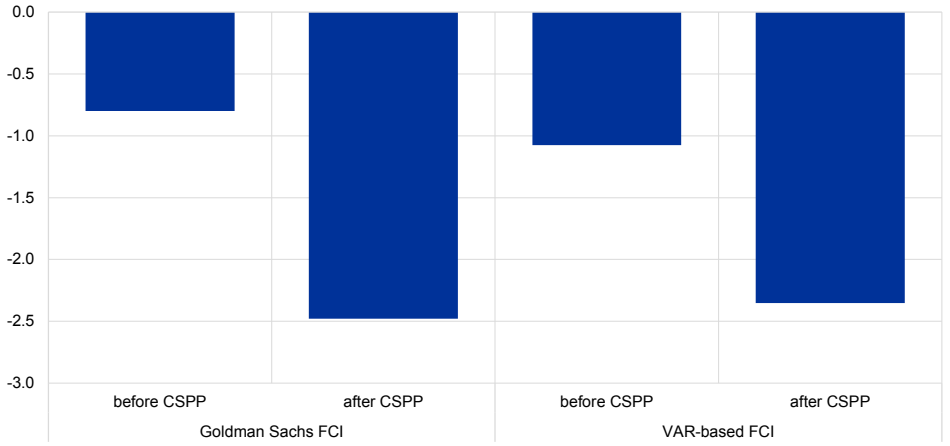



Sources: Thomson Reuters, Merrill Lynch and ECB calculations.
Notes: The vertical line marks the announcement of the CSPP on 10 March 2016. The latest observations are for November 2017 for MFI lending rates and December 2017 for cost of equity and cost of market-based debt.

**Chart 5**

Relationship between a 50 basis point decline in investment-grade NFC bond spreads and standardised financial conditions indices

(generalised impulse response functions, standard deviations)




Sources: Bloomberg, iBoxx, Thomson Reuters and ECB calculations.
Notes: The generalised impulse response functions (GIRFs) are obtained from a daily bivariate VAR with corporate spreads and two different financial conditions indices (FCIs). The GIRFs show the shock at impact generated from the corporate spreads. FCIs are standardised over the sub-sample periods. "Before CSPP" covers the period from 1 June 2014 to 9 March 2016. "After CSPP" covers the period from 10 March 2016 to 7 February 2018.

## 2.2 Impact of the CSPP on corporate bond issuance

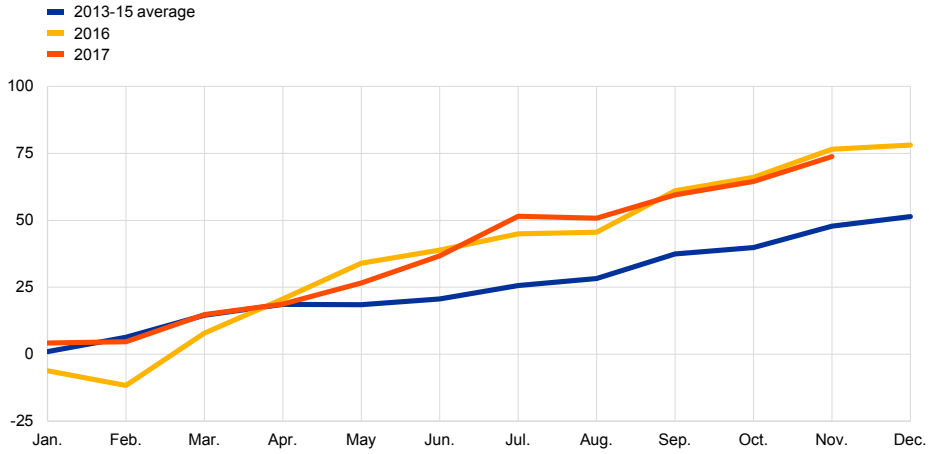
**The CSPP appears to have contributed to improved supply conditions in primary corporate bond markets, particularly among eligible issuers.** Net issuance by NFCs picked up immediately after the announcement of the CSPP in March 2016. Since then it has remained stronger than in previous years (see

Chart 6). This trend is particularly evident among NFCs based in France, the Netherlands and, to a lesser extent, Italy (see Chart 7). On a gross basis, issuance also remained concentrated in relatively few countries. Specifically, an increase in issuance by NFCs based in Germany, Spain, France, Italy and the Netherlands has been seen since the CSPP announcement.[68] By contrast, banks, whose bonds are not eligible for purchase under the CSPP and which, unlike NFCs, have access to TLTROs, have reduced their bond issuance funding activities.

**Chart 6**

Net issuance of euro-denominated long-term debt securities by NFCs in the euro area

(EUR billions; cumulative monthly flows)

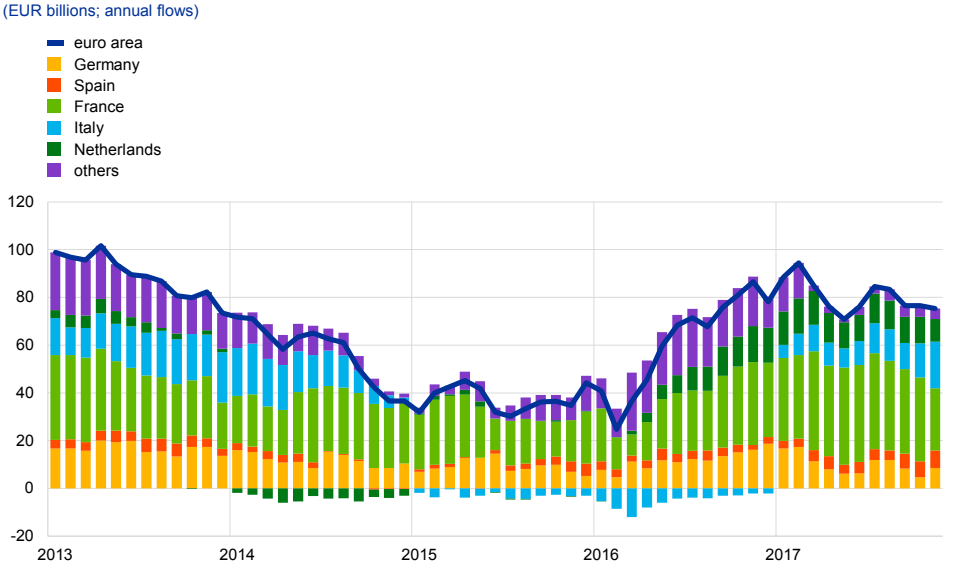



Source: ECB.
Note: The latest observations are for November 2017.

[68] It can be challenging to assess the country breakdown of issuance because companies may use subsidiaries in another euro area country to issue debt.

**Chart 7**

Net issuance of euro-denominated long-term debt securities by NFCs in selected euro area countries



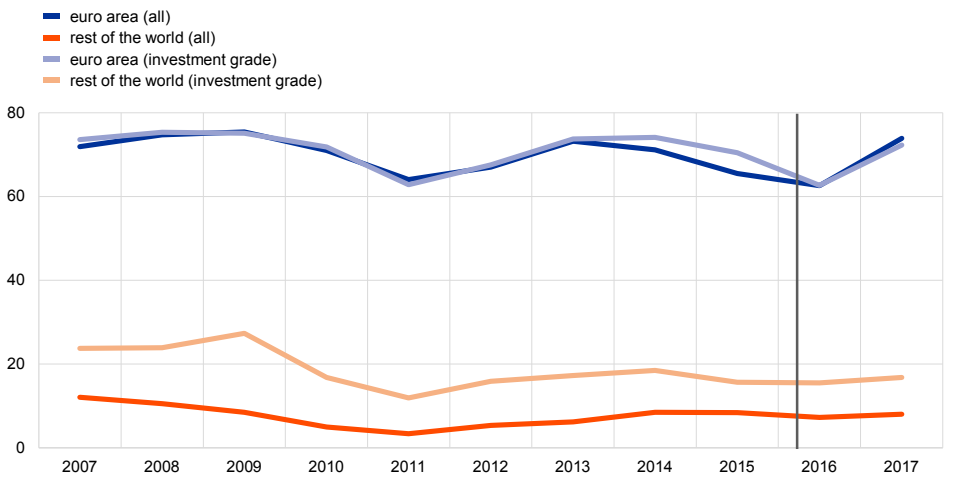

Source: ECB.
Notes: The breakdown is by residence of issuer. Net issuance includes both newly issued bonds and sales from past issues (i.e. tap issues). The latest observations are for November 2017.

**At the same time, the maturity of newly issued, CSPP-eligible bonds has increased.** Between March 2016 and October 2017, the average residual maturity of outstanding senior unsecured investment-grade bonds issued by NFCs increased from 8.9 years to 9.3 years, corresponding to a maturity lengthening of about 5 months. This change is larger than the maturity lengthening observed between June 2014 and the announcement of the CSPP, i.e. in a period when other major non-standard monetary policy measures were introduced by the Eurosystem. Whereas the residual maturities of outstanding bonds issued by NFCs have lengthened in all major euro area countries, outstanding bonds issued by banks – which are ineligible for purchase under the programme – have not shown any increase in residual maturities across countries.

**Lastly, the CSPP seems to have shifted the preferences of NFCs back towards issuing euro-denominated bonds at levels recorded before 2015.** Over the CSPP period, the share of eligible euro-denominated bond issuance by NFCs in total NFC bond issuance has risen. In 2017 it reached levels last seen in early 2015 (see Chart 8). Such a shift in favour of euro-denominated assets is not observable for ineligible bonds issued by NFCs in other jurisdictions or issued by the euro area banking sector, suggesting that at least part of the change in the currency denomination of bonds issued by euro area NFCs over the CSPP period is due to the programme.

**Chart 8**

Share of debt issued in euro by euro area NFCs and by NFCs in the rest of the world




Sources: Dealogic and ECB calculations.
Notes: The lines for "euro area" show new bond issuance denominated in euro as a share of total new bond issuance by NFCs based in the euro area. The lines for "rest of the world" show new bond issuance denominated in euro as a share of total new bond issuance by all NFCs based outside the euro area. The vertical line marks the announcement of the CSPP on 10 March 2016. The latest observations are for December 2017.

## 2.3 Impact of the CSPP on the capital structure of euro area NFCs and spillover to CSPP-ineligible borrowers

**The rising NFC bond issuance suggests a shift by some firms from bank-based to market-based funding.** Since the announcement of the CSPP, the net issuance of bonds by the NFC sector as a whole has risen relative to the net flow of loans to NFCs from monetary financial institutions (MFIs) (see Chart 9). NFCs whose bonds are eligible for purchase under the CSPP appear to have substituted bank financing with bond financing to some degree. In a sample of 534 euro area NFCs, the 113 NFCs with bonds that are eligible for the CSPP showed a rise in the share of bonds in their overall debt structure, with the average across firms growing from 64% at the end of 2015 to 66% by the second quarter of 2017 (see Chart 10, left panel). By contrast, the share of bank loans of longer maturity declined from an average of 24% to 21% over the same period. At the same time, the 421 NFCs with bonds that are ineligible for the CSPP did not change their debt structure (see Chart 10, right panel). Similar results are obtained by Grosse-Rueschkamp, Steffen and Streitz[69] and Arce, Gimeno and Mayordomo[70], who find that, in some countries, the CSPP has triggered a substitution of bank financing with bond financing in large CSPP-eligible companies.

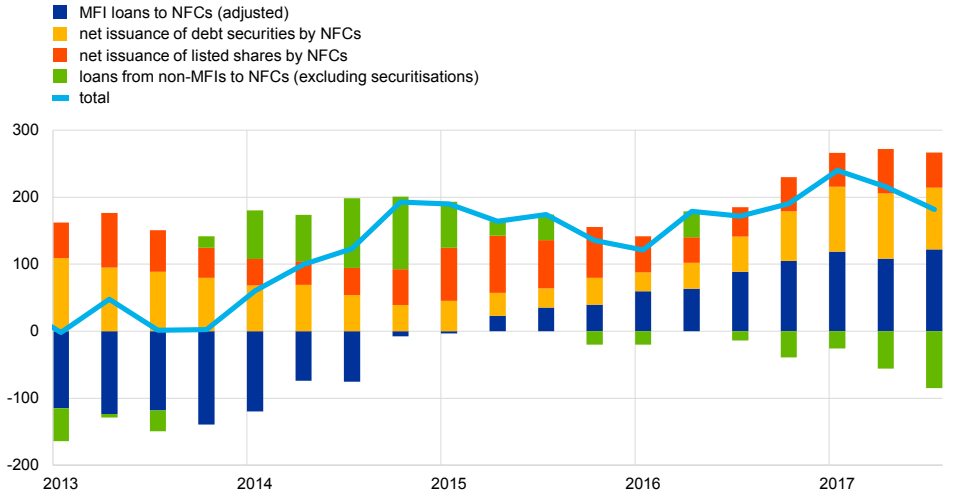
[69] See Grosse-Rueschkamp, B., Steffen, S. and Streitz, D., "Cutting out the middleman – The ECB as corporate bond investor", SSRN, October 2017.

[70] See Arce, Ó. Gimeno, R. and Mayordomo, S., "Making room for the needy: The credit-reallocation effects of the ECB's corporate QE", *Working Papers*, No 1743, Banco de España, 2017.

## Chart 9

NFCs' flow of external financing

(EUR billions; quarterly flows, four-quarter sums)

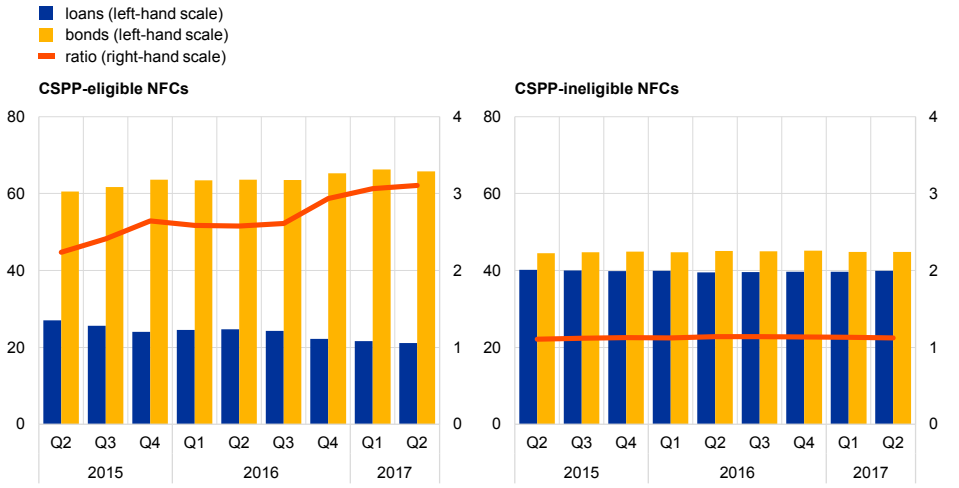



Sources: Eurostat, ECB and ECB calculations.
Notes: Non-MFI loans include loans from other financial intermediaries (OFIs) and insurance corporations and pension funds (ICPFs) to NFCs. The latest observations are for September 2017.

## Chart 10

Debt structure of NFCs: eligible versus ineligible

(percentages)



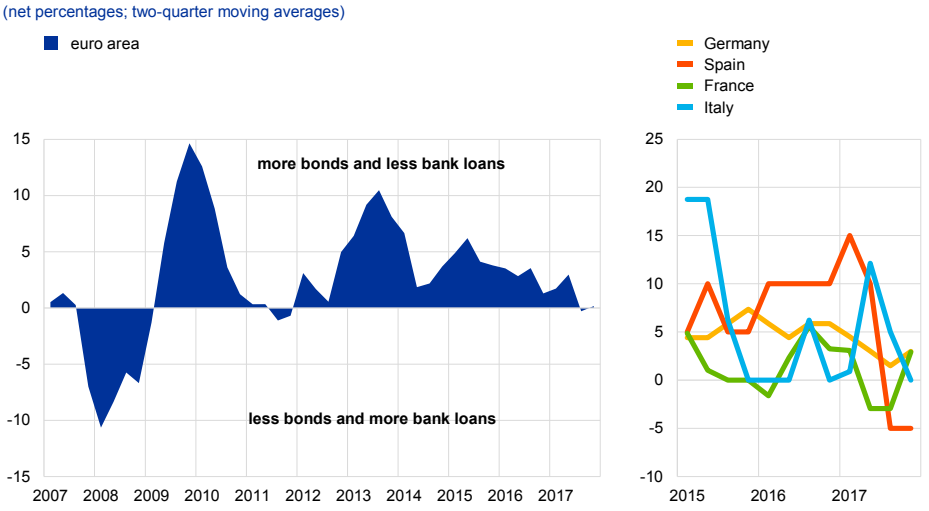

Sources: S&P Capital IQ and ECB calculations.
Note: The latest observations are for the second quarter of 2017.

**Notwithstanding the rise in bond financing in some firms, on aggregate the flow of bank loans was not adversely affected.** Rather, the net flow of MFI loans to the NFC sector has been positive and has even accelerated since the announcement of the CSPP (see Chart 9). Indeed, model-based evidence suggests that the flow of MFI loans to NFCs remained relatively tightly linked to its fundamental drivers in 2016, whereas the issuance of debt securities has been well

above the level implied by fundamental factors.[71] Results from the euro area bank lending survey (BLS) corroborate these findings. The CSPP has not reversed the decline in the perception among banks that NFCs are relying more on market-based financing than on bank-based financing to meet their financing needs (see Chart 11). The net percentage of banks reporting that NFCs would rather resort to market funding than to bank loans has fallen in the BLS round of the fourth quarter of 2017 tangibly below the level seen at the time of the CSPP announcement in March 2016, reaching its lowest point since the euro area sovereign debt crisis.

**Chart 11**

Market-based financing versus MFI loans to NFCs – BLS substitution financing indicator




Sources: Eurostat and ECB.
Notes: The indicator is constructed using question 7 of the BLS, which assesses whether "issuance/redemption of debt securities" is a factor affecting the demand for loans to enterprises. A positive (negative) net percentage indicates that banks see a decrease (increase) in bank loan demand due to an increase (decrease) in bond issuance. The latest observations are for December 2017.

**Taken together, these observations indicate that the CSPP may have freed up bank balance sheet capacity to lend to CSPP-ineligible firms.** With net MFI lending to the NFC sector accelerating overall and some CSPP-eligible companies shifting their funding away from bank loans, NFCs with little or no access to bond markets may have indirectly benefited from the CSPP, as banks have increased the supply of bank loans to them. Although it is difficult to attribute changes in bank-lending behaviour to the CSPP, some evidence supports the conclusion that the programme may have made a positive contribution to the provision of bank financing to CSPP-ineligible firms, particularly smaller firms. Specifically, the net percentage of small and medium-sized enterprises (SMEs) reporting improvements in the willingness of banks to provide credit in the Survey on the Access to Finance of Enterprises (SAFE) increased somewhat in the first half of 2016 (see Chart 12) at the time in which the CSPP was announced and became operational. This was

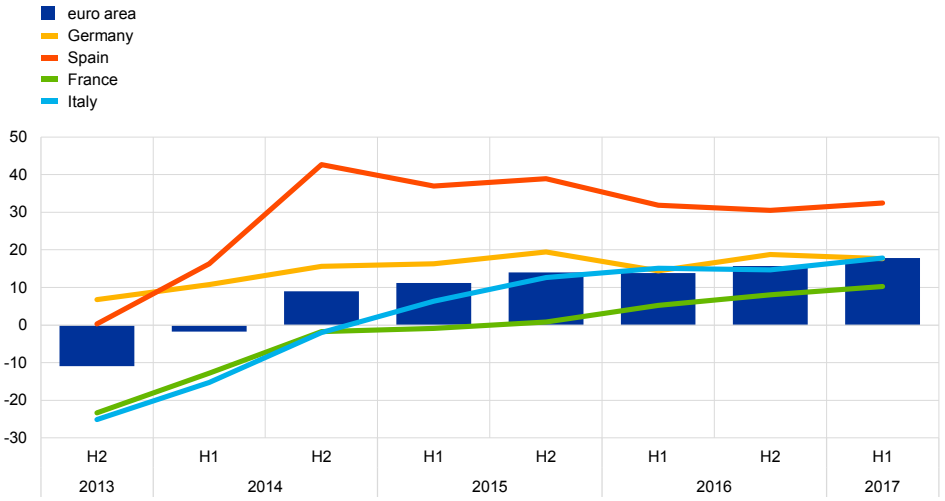
[71] In 2017, by contrast, the issuance of debt securities fell below the level implied by fundamental factors, which may be partly explained by firms having covered their near-term financing needs through higher retained earnings, greater recourse to borrowing from banks, and the frontloading of bond issuance to 2016. Moreover, merger and acquisition activity continued to moderate, reducing the demand for external financing.

particularly evident in France, where companies have accounted for a large share of the higher bond issuance seen since the CSPP announcement (see Chart 12, green line). At the same time, Arce, Gimeno and Mayordomo[72] offer direct econometric evidence for a surge in lending to CSPP-ineligible firms in Spain around the time of the CSPP announcement, while Grosse-Rueschkamp, Steffen and Streitz[73] demonstrate a stronger rise in the lending volumes of banks with a large share of CSPP-eligible borrowers in their portfolios than in those of banks with a smaller share of such borrowers.

**Chart 12**

Change in willingness of banks to provide credit to SMEs in the euro area and selected euro area countries

(preceding six-month period; net percentages of respondents)




Sources: ECB and ECB calculations.
Note: Figures are from rounds ten (October 2013 to March 2014) to seventeen (April to September 2017) of the SAFE survey.

## 3 CSPP impact on secondary market functioning and liquidity conditions

**The Eurosystem considers the impact on market functioning and liquidity when it calibrates the implementation of the CSPP.** The CSPP is aimed at affecting general market conditions to support lending to the real economy, while seeking to avoid creating undue market distortions. The calibration of CSPP parameters – including the overall amounts purchased, the share of participation in primary and secondary markets, the distribution across countries, sectors or companies, and the overarching risk management framework – is designed and carried out to minimise the potential detrimental impact on corporate bond market functioning. This objective of "market neutrality" is pursued through flexibility and adaptability to market conditions.

72 Arce, Gimeno and Mayordomo, op. cit.

73 Grosse-Rueschkamp, Steffen and Streitz, op. cit.

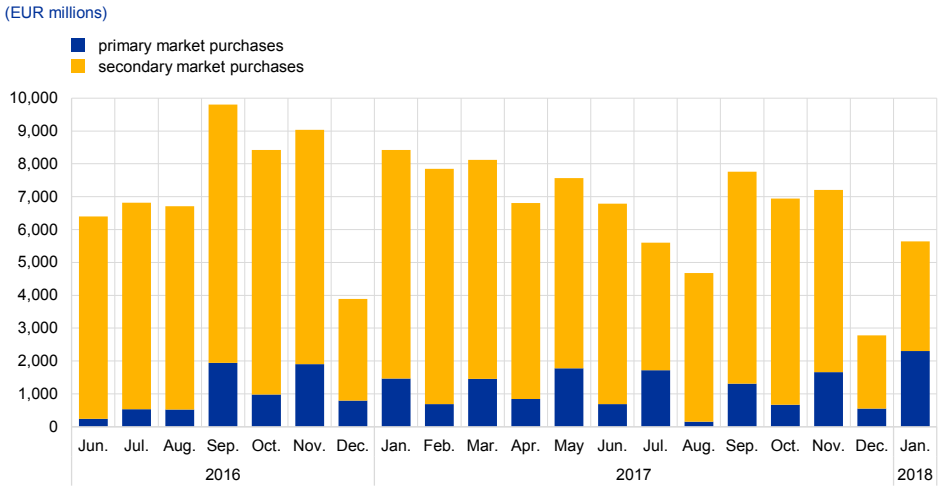
**Several indicators can be used to assess whether the CSPP implementation is in line with the market neutrality principle of the APP.** Market infrastructure, liquidity and functioning are dynamic in nature and are influenced by a multitude of factors which fall outside the scope of the monetary policy programmes. Therefore, not all changes in market functioning and liquidity can be attributed to the CSPP. For example, geopolitical developments, seasonal trends and individual issuer or sector-related events can have an effect on overall market conditions or on an individual issuer's bond yields.

## 3.1 Market functioning

**The adaptability of CSPP monthly purchase volumes enables a flexible implementation of the programme in response to varying market conditions, including different issuance and secondary market activity.** Primary market issuance and secondary market liquidity conditions follow a well-known pattern (i.e. usually strong at the start of the year and deteriorating in the summer and towards the end of the year). These patterns are used as an input when planning the CSPP monthly purchase amounts. If the conditions turn out to be substantially different from those anticipated, the CSPP can adapt by either increasing or decreasing purchases compared with the initial plan. Since its inception, monthly net CSPP purchases have fluctuated substantially, from around €3 billion in months of low market liquidity and low primary market activity to almost €10 billion in the most active months (see Chart 13).

**Chart 13**

Primary and secondary market net purchases under the CSPP



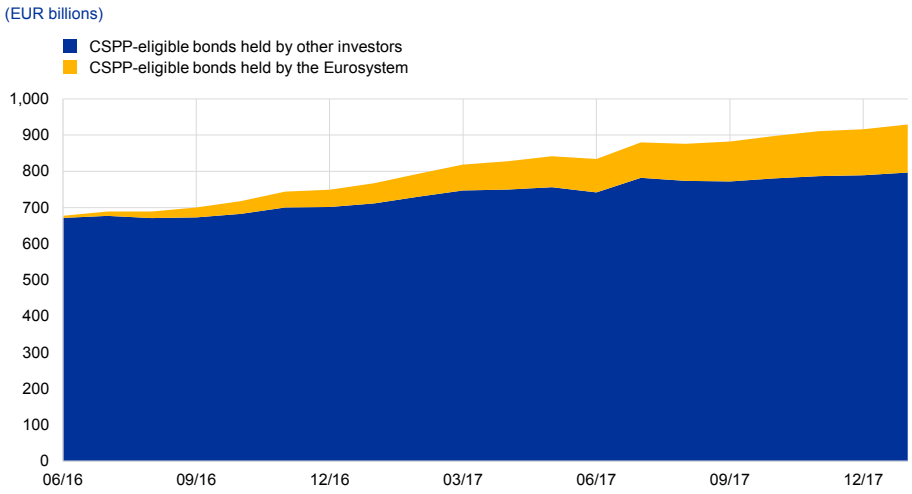

Source: ECB.
Note: The latest observations are for January 2018.

**The flexibility of the split in the CSPP between primary and secondary market purchases provides another means of adapting to market conditions.** The Eurosystem has no pre-set target for dividing overall purchase volumes between primary and secondary markets. This allows it to adapt to changing primary market issuance and secondary market liquidity conditions, which can be unpredictable.

This can be seen in the variability of the division between primary and secondary market purchases in Chart 13. Overall, when it participates in primary market issuances, the Eurosystem aims to balance the purchase volume objective of the programme with the need to ensure continued market functioning. Similarly, when making purchases in the secondary market, the Eurosystem considers, among other things, general market conditions and the scarcity of specific debt instruments.

**The Eurosystem's CSPP holdings are moderate in relative terms, which reduces the risk of a large and negative impact on market functioning.** After almost two years of programme implementation, cumulative CSPP holdings amount to around €150 billion (at amortised cost) and now account for 17% of the total CSPP-eligible universe. However, owing to the increase in issuance mentioned in the previous section, the volume of CSPP-eligible bonds held by other market participants has also risen in absolute terms (see Chart 14). Since the other market participants continued to play an important role, a negative impact on the price-setting and price discovery mechanism is minimised.

**Chart 14**
CSPP-eligible universe and share held by the Eurosystem




Sources: Eligible Assets Database (EADB) and ECB calculations.
Note: The latest observations are for January 2018.

## 3.2 Liquidity conditions

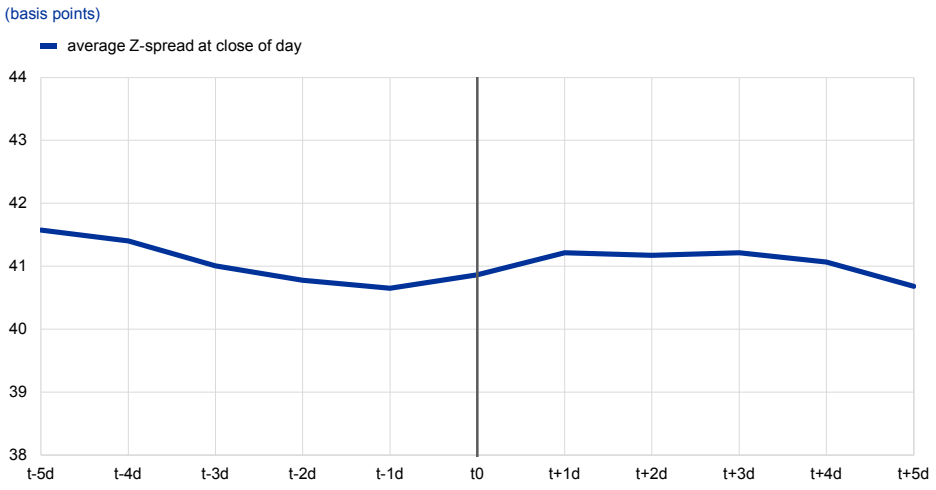
**The evaluation of the impact of the CSPP on market liquidity is challenging, because market liquidity is difficult to quantify with a simple statistic.** Markets are usually defined as liquid if a market participant is able to make a transaction without having a large impact on prices. Several quantitative indicators are needed to trace this comprehensively through time.

**An evaluation of individual trades suggests that the short-term impact of CSPP trades on the market has been muted.** To assess the impact, an event study was performed, focusing on the largest trades carried out within the CSPP. These were not found to have had a material impact on the pricing of the bonds in the market, as

spreads before and after the trades for the bonds concerned did not differ significantly (see Chart 15). Thus, while the CSPP may have contributed to overall spread compression in corporate bond markets, it seems that individual trades did not have a distortional impact on the pricing of particular bonds. Hence, it may be concluded that relative price formation is broadly unaffected.

**Chart 15**

Impact of large CSPP trades on spreads



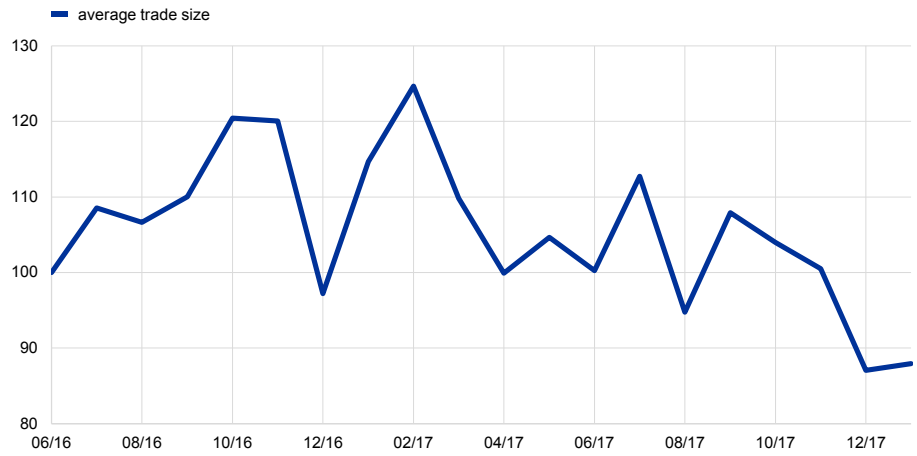

Sources: Bloomberg and ECB calculations.
Note: The chart is based on the 58 largest CSPP secondary market trades where there were no other CSPP trades on the 5 preceding or 5 succeeding days and where price information is available for all days.

**The evolution of the average CSPP trade size also suggests that liquidity conditions have remained adequate (see Chart 16).** If liquidity conditions had deteriorated since the start of the CSPP, the Eurosystem would most likely have had to adapt by resorting to a significantly higher number of smaller trades. An analysis of the average size of all CSPP secondary market trades shows that there was only a slight drop in the average size after more than one year of CSPP implementation. However, the Eurosystem has adapted to market conditions and therefore occasionally has reduced its average trade size, particularly at times when liquidity is typically low owing to seasonal trends (e.g. in December).

**Chart 16**

Average size of CSPP secondary market trades

(index: June 2016 = 100; monthly data)



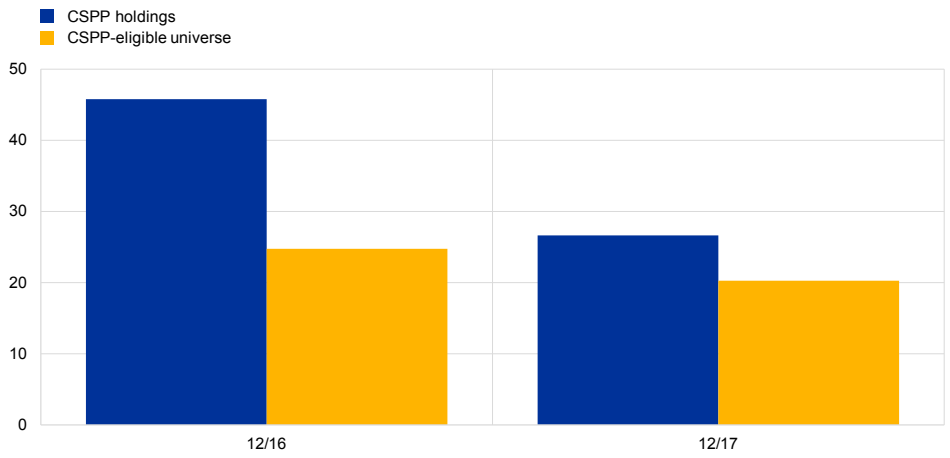

Source: ECB.
Note: The latest observations are for January 2018.

**As a proportion of its overall holdings, the Eurosystem buys a higher share of recently issued bonds than their market weight, which reduces any potential negative impact on liquidity conditions.** The CSPP operates under an overarching monetary policy and risk management framework which ensures due diversification across issuers, sectors and countries. Nevertheless, the holdings of each bond may vary from its weight in the CSPP-eligible universe, allowing the CSPP to adapt to the different liquidity conditions of eligible instruments. For instance, some bonds, in particular older, less liquid ones, are less available in the secondary market,[74] and the Eurosystem tends to receive more offers of newer, more liquid bonds. Chart 17 shows that the proportion of recently issued bonds (issued within the last year) in the Eurosystem's CSPP holdings is higher than in a market capitalisation benchmark. It also shows that this deviation decreased in 2017 compared with 2016. This is to be expected, since, as older and less liquid bonds mature, such deviations are gradually reduced and the composition of CSPP holdings converges to that of the market capitalisation-based benchmark.

74 Recently issued or "on-the-run" securities are generally considered to be more liquid in the secondary market. As time passes, the liquidity of the security usually decreases. An older, less liquid security is called an "off-the-run" security.

**Chart 17**

Share of recently issued bonds in CSPP holdings and in the CSPP-eligible universe

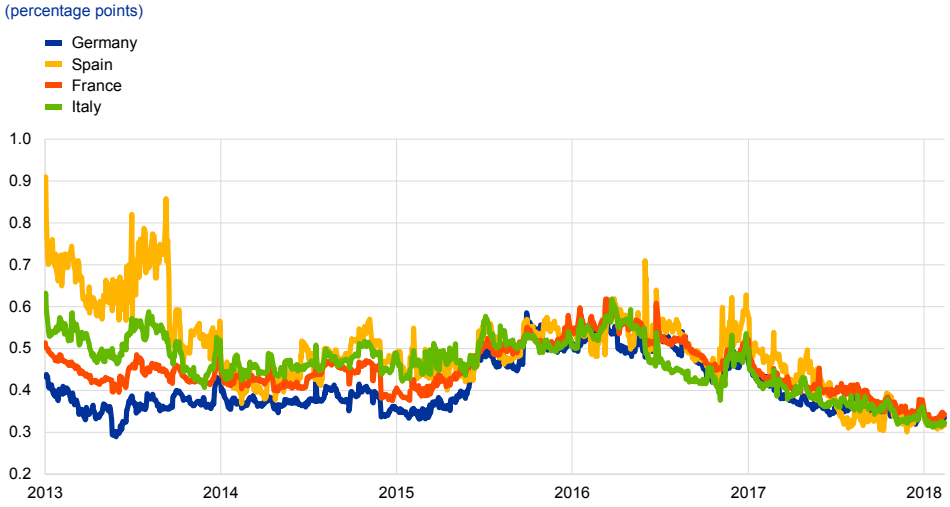



Sources: Bloomberg and ECB calculations.
Notes: The blue bars denote the share of CSPP-eligible bonds issued during the last year in the total CSPP holdings of the Eurosystem. The yellow bars denote the share of CSPP-eligible bonds issued during the last year in the total CSPP-eligible universe.

**Finally, bid-ask spreads have tightened considerably since the start of the CSPP, suggesting that the programme has been supportive of liquidity conditions.** A liquid market is usually characterised by low bid-ask spreads, i.e. a small difference between what a buyer is willing to pay and what a seller is willing to accept for an asset. Bid-ask spreads for investment-grade NFC bonds in a range of countries had been widening in 2015 (see Chart 18), but, since the CSPP announcement in March 2016, these spreads have shown a clear tightening tendency and are currently at historically low levels. This can be seen as an overall positive side effect of the regular presence of the CSPP in credit markets.

**Chart 18**

Bid-ask spreads of investment-grade NFC bonds in selected euro area countries




Sources: iBoxx and ECB calculations.
Notes: The country indices are computed as the weighted average of the spread between the ask and the bid price as a percentage of the mid-price of individual securities. The latest observations are for 13 February 2018.

## 4 Conclusions

**Since the announcement of the CSPP on 10 March 2016, financing conditions for euro area NFCs have improved considerably.** Corporate bond spreads have tightened and corporate bond issuance has increased. An ample set of analytical studies attributes a sizeable part of these developments directly to the effects of the programme. Indirectly, the CSPP has also had positive knock-on effects on the wider financing environment for firms in the euro area. Financing conditions outside of corporate bond markets improved, and there are indications that the CSPP has freed up the balance sheet capacity of banks to lend to companies that are not eligible under the programme. In fact, although the programme appears to have contributed to a shift from bank to bond funding among eligible NFCs, this has not resulted in a decline in bank lending to the NFC sector as a whole.

**Reassuringly, evidence of adverse side effects on corporate financing and market functioning as a result of the CSPP is rather scarce.** In particular, the smooth implementation of the programme, underpinned by the flexible pace of Eurosystem purchases and its adaptability to dynamics in the primary market, has safeguarded corporate bond market functioning and liquidity conditions. Overall, these findings back up the assessment of a successful implementation of the programme under changing market conditions without having a distortive market impact.

# 3 Risk sharing in the euro area

**Prepared by Jacopo Cimadomo, Sebastian Hauptmeier, Alessandra Anna Palazzo and Alexander Popov**

*This article discusses the concept of risk sharing, which generally refers to the notion that economic agents, such as households and firms, attempt to insure their consumption streams against fluctuations in the business cycle of their country, i.e. they try to "smooth out" changes in their consumption resulting from economic shocks. The article then considers what proportion of an economic shock in the euro area can be smoothed, and compares this with the situation in the United States. While a comparison of the degree of risk sharing between the euro area and the United States needs to be seen against the background of different institutional and political architectures, it nevertheless offers potentially interesting economic insights. The article shows that, while in the euro area around 80% of a shock to GDP growth in a given country remained unsmoothed over the period 1999-2016, thus resulting in sizeable differences in consumption growth across countries, in the United States at most 40% of a shock to state-specific GDP was unsmoothed over the same period. The article also evaluates the relative importance of the main risk sharing channels, i.e. the credit, capital and fiscal channels, as well as the role of European institutions. It shows that, in the euro area, risk sharing takes place mainly via the capital channel, i.e. through cross-border holdings of financial assets. Finally, the article puts the empirical results into the perspective of the ongoing debate on enhancing the institutional architecture of Economic and Monetary Union (EMU). It calls for euro area countries to make their economies, banking sectors and public finances less vulnerable to macroeconomic shocks. The article explains how efficient and integrated financial markets are a core prerequisite for effective private risk sharing in the euro area. It also shows how the euro area would benefit from a central fiscal stabilisation function to support national economic stabilisers in the presence of large economic shocks and thereby make EMU more resilient.*

## 1 Introduction

The experience with the Great Recession in the euro area has triggered an ongoing policy debate on ways to improve the currency union's resilience to economic shocks. There are two dimensions to this debate: a country-specific one, which deals with domestic reforms to enhance the shock absorption capacity of individual countries, e.g. via structural reforms and the creation of fiscal buffers, and a euro area-wide dimension. Regarding the latter, the resilience of the euro area as a whole could be supported by more effective cross-country risk sharing.

The concept of international risk sharing generally refers to the idea that countries, or economic agents such as households and enterprises, "share risks" to insure themselves against adverse events affecting their economies. For example, they can invest in and receive income from other economies that are not affected by such events. The economic literature suggests that unexpected changes in income and consumption (often referred to as "shocks") are detrimental to the welfare of an

economy. Households, firms and the public sector may therefore benefit from insuring themselves against such shocks via "private" and "public" mechanisms which operate at the inter-jurisdictional level, i.e. between states or regions in a federation (such as the United States or Germany) or the international level, i.e. across different countries (for example in the euro area). Private mechanisms work through two main channels. The first, the "savings channel" (also referred to as the "credit channel"), operates via cross-border saving/borrowing, i.e. the public sector, households and firms may borrow internationally (or inter-jurisdictionally) to sustain consumption or investment levels in the face of adverse shocks. Indeed, the supply of credit to an economy is in principle less affected by country-specific shocks when international banks operate in that economy. The second is a "capital market channel", which runs via internationally/inter-jurisdictionally diversified private investment portfolios. These can generate income flows unrelated to fluctuations in the home economy, as long as the home and the other economies are not strongly interlinked and therefore experience similar business cycles. A third "public" channel relies on cross-regional fiscal transfers. This channel is generally well-developed in mature federations, where transfers from the federal government help to smooth the impact of shocks at the state or regional level.

Empirical evidence suggests that the degree of cross-country risk sharing in the euro area falls short of what is observed for regions in federations, notably among US states. Three main results emerge from the empirical literature. First, around 60-80% of state-specific shocks is smoothed via the above risk sharing channels in the United States while the corresponding number for euro area countries has generally been no more than 20% since the start of the EMU.[75] Second, risk sharing in the United States takes place mainly via private channels, with the capital market channel explaining the largest share of the overall cross-state smoothing of shocks. Third, fiscal transfers from the federal budget contribute significantly to the absorption of state-specific shocks in the United States (10-15%), while the euro area institutional architecture lacks a central macroeconomic stabilisation function, so that smoothing via this channel in the euro area is negligible.

Enhancing the euro area's shock absorption capacity is one of the main themes of the "Five Presidents' Report". Published in June 2015, the report, by the President of the European Commission in close cooperation with the Presidents of the Euro Summit, the Eurogroup, the ECB and the European Parliament, was aimed at providing a roadmap for deepening the institutional architecture of EMU across various policy domains.[76] It emphasises that "For all economies to be permanently better off inside the euro area, they also need to be able to share the impact of shocks through risk-sharing within the EMU". However, this would require "significant

[75] See, e.g., "Quarterly Report on the Euro Area Volume 15, No 1 (2016)", *Institutional Papers*, No 024 , European Commission, 2016, and Alcidi, C., D'Imperio, P. and Thirion, G., "Risk-sharing and Consumption-smoothing Patterns in the US and the Euro Area: A comprehensive comparison", *CEPS Working Document*, No 2017/04, May 2017. Results for the euro area may show a larger degree of shock absorption when only private consumption is considered, as in Cimadomo, J., Furtuna, O. and Giuliodori, M., "Private and public risk sharing in the euro area", *Working Paper Series*, ECB, forthcoming.

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

and sustained convergence towards similarly resilient economies" to avoid permanent transfers and weakened incentives for sound policymaking in the individual countries.

This article provides new estimates of the relative contributions of the saving, capital and fiscal channels to consumption risk sharing in both the euro area and the United States. The empirical analysis is based on a sample which runs from 1999 until 2016. For the euro area, it discusses the role of European institutions and official assistance for risk sharing, and links to the ongoing debate on deepening EMU. The article builds on previous ECB work on indicators of risk sharing in the euro area, included regularly since 2016 in the annual "Financial Integration in Europe" report.

## 2 The concept of risk sharing

### 2.1 Consumption and output synchronisation in the euro area versus the United States

The economic literature describes the notion of risk sharing as the idea that agents insure their consumption streams against country-specific business cycle fluctuations.[77] It also says that insuring consumption streams results in an improvement in welfare.[78] Consumption can be smoothed via inter-temporal channels, e.g. through private savings, welfare programmes and intergenerational transfers (i.e. public debt). For example, governments may increase transfers to households during bad economic times, and finance these transfers with public debt, which will need to be repaid by future generations. However, consumption streams can also be insured via risk sharing through international channels, e.g. cross-country transfers which help to cushion country-specific shocks. The recent debate in the euro area has developed around the international dimension of risk sharing, for example in the context of the discussion about the deepening of banking and capital markets union and the introduction of a fiscal capacity for the euro area. This article also focuses on international risk sharing.[79]

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77 While the literature refers to both consumption and income risk sharing, in this article we focus mainly on the former.

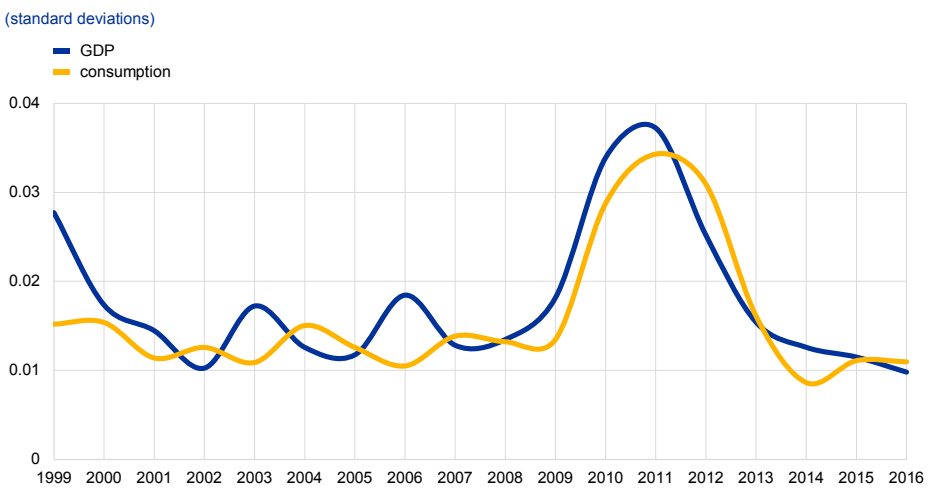
78 See, e.g., Canova F. and Ravn, M., "International consumption risk-sharing", *International Economic Review*, Vol. 37, No 3, 1996, pp. 573-601.

79 An important aspect of this discussion relates to the role of financial markets: if markets are "complete", economic agents can insure themselves against any type of risk that may materialise. For example, firms can buy insurance contracts which protect them against unexpected adverse shocks, e.g. a decline in the demand for their products. In this hypothetical environment consumption growth in a country is not affected by idiosyncratic shocks but only by global, i.e., uninsurable, shocks. If, more realistically, markets are incomplete, however, i.e. economic agents do not have a complete menu of insurance contracts for all possible risks, consumption insurance may have to be reinforced by means of institutions, e.g. transfer or lending schemes that operate between countries as insurance mechanisms. Farhi, E. and Werning, I., "Fiscal Unions", *American Economic Review*, Vol. 107, No 12, 2017, pp. 3788-3834, highlights that – even in presence of complete markets – there might be benefits from public risk sharing because agents do not make full use of the positive stabilising effects provided via public institutions.

Tests of international risk sharing have been typically based on the relationship between total economy consumption growth and output growth, controlling for global economic shocks and other factors. To the extent that consumption growth is uncorrelated with output growth, this would point to effective risk sharing. Empirically, the correlation between consumption and output growth in euro area countries is indeed generally far from zero, e.g. over the period 1999-2016 it is around 0.40 for Portugal and around -0.30 for Finland. Under perfect risk sharing, consumption would be completely delinked from output fluctuations, i.e. the correlation coefficient would be zero for all countries. It is interesting to note that, in the euro area, the cross-country dispersions of output and consumption growth have been very similar in the EMU period (Chart 1), whereas in the United States cross-state dispersion of output growth has been significantly larger than cross-state dispersion of consumption growth (Chart 2), thus signalling the presence of smoothing effects via federal transfers or via credit and capital channels. This initial evidence seems to suggest that risk sharing operates more powerfully in the United States than in the euro area.

**Chart 1**

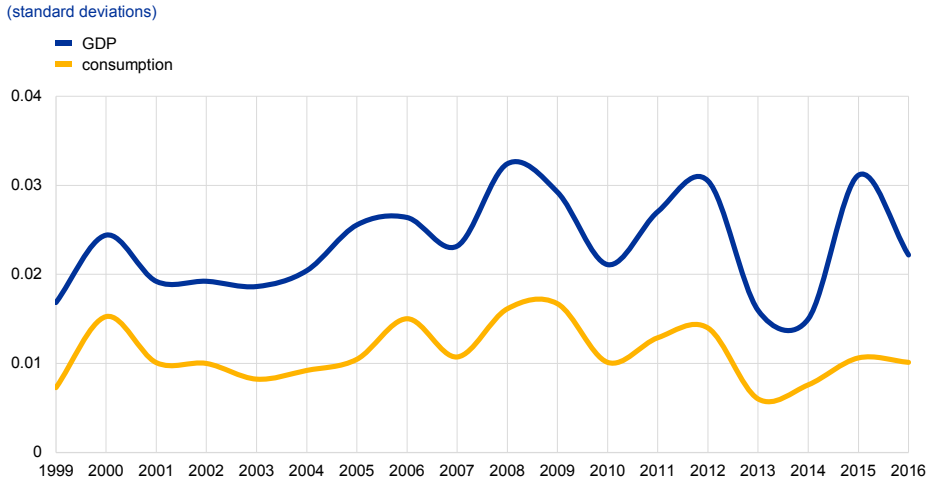
Output and private consumption dispersion in the euro area




Sources: European Commission (AMECO database) and ECB calculations.
Notes: Cross-country dispersion, measured in standard deviations, of real per-capita consumption and GDP in a sample of 11 euro area countries.

**Chart 2**

Output and private consumption dispersion in the United States




Sources: Federal Reserve Bank of St. Louis (FRED database), US Bureau of Economic Analysis and ECB calculations.
Notes: Cross-country dispersion, measured in standard deviations, of real per-capita consumption and GDP in the sample of 50 US states.

## 2.2 The literature on international risk sharing

The empirical risk sharing literature has been based on more sophisticated tests than those presented above but still has focused on the relationship between consumption and output. In particular, it has examined the extent of risk sharing both in monetary unions with a common fiscal policy (the United States, Germany) and in monetary unions without a common fiscal policy (the euro area). The former case generally exhibits a high degree of overall risk sharing, with a large contribution from private sector markets.[80]

### 2.2.1 Monetary unions with common fiscal policy

In their seminal paper on the United States, Asdrubali, Sorensen and Yosha suggested that, for the period 1963-90, 75% of shocks to the per capita gross product of individual states was smoothed.[81] This implies that only about a quarter of state-specific income shocks remained unsmoothed. 13% of income shocks was smoothed by the federal tax-transfer and grant system. In this regard, it should be noted that in several US states a balanced budget rule is in place, thus implying a limited role for counter-cyclical fiscal policies at the state level. As regards other channels, 39% was smoothed by insurance or cross-ownership of assets, and 23% by borrowing or lending. In other words, 62% of state-specific shocks in the United States is smoothed through market transactions, almost five times the contribution of

[80] For an earlier survey of the macro risk sharing literature, see Special Feature A of "Financial Integration in Europe", ECB, 2016.

[81] Asdrubali, P., Sorensen, B., and Yosha, O., "Channels of Interstate Risk Sharing: United States 1963-1990", *Quarterly Journal of Economics*, Vol. 111, No 4, 1996, pp. 1081-1110.

the federal government to income smoothing. Moreover, some papers have shown that risk sharing in the United States has been increasing over time, which could be in part due to banking deregulation.[82] Studies focusing on other monetary unions, characterised by a large federal government, such as Canada, find results similar to those for the United States in terms of channels for consumption smoothing and overall size of smoothed versus unsmoothed shocks.[83]

Works on European countries are rarer, and generally point to stronger risk sharing for countries whose regions are more fiscally and financially integrated. Some authors have analysed the German case. For example, Hepp and von Hagen [84] find a very high level of risk sharing across the German regions. In particular, this analysis shows that in pre-unification Germany, 91% of shocks to per capita state gross product was smoothed (i.e. only 9% was left unsmoothed), with the bulk (54%) smoothed through the federal tax-transfer and grant system, 20% smoothed through capital markets and 17% through credit markets. After unification, the unsmoothed component of risk sharing rose to 20%. At the same time, the contribution of risk sharing through private channels increased to 69%, with the bulk (51%) smoothed through capital markets. This points to a large potential for risk sharing achieved via the cross-border ownership of productive assets in the context of regions with a sufficiently heterogeneous degree of economic development.

### 2.2.2 Risk sharing across euro area countries

It is natural to conjecture that there will be lower levels of risk sharing across countries in Europe than in existing mature federations. This was clearly the case in the years leading to the introduction of the euro, with comparatively underdeveloped financial markets, rigid labour markets, low mobility of labour and the absence of a federal system of taxes and transfers similar to that of, for example, the United States. Earlier works indicate that at most 40% of country-specific GDP shocks was smoothed in the pre-EMU period.[85] At the start of the EMU, it was generally believed that the creation of the single currency would in itself enhance income and consumption smoothing. A common currency is in principle likely to reduce the costs of trading and information gathering, and therefore should lead to higher cross-country ownership of financial assets. The removal of currency risk might further stimulate foreign direct investment, and a greater integration of bond markets would imply deeper and more liquid markets for borrowing and lending. It was understood

82 Athanasoulis, S. and van Wincoop, E., "Risk sharing within the United States: What do financial markets and fiscal federalism accomplish?", *Review of Economics and Statistics*, Vol. 83(4), pp. 688-698; Demyanyk, Y., Ostergaard, C. and Sorensen, B., "U.S. Banking Deregulation, Small Businesses, and Interstate Insurance of Personal Income", *Journal of Finance*, Vol. 62, No 6, 2007, pp. 2763-2801.

83 See, for example, Crucini, M.J., "On International and National Dimensions of Risk Sharing", *Review of Economics and Statistics*, Vol. 81, No 1, 1999, pp. 73-84.

84 Hepp, R. and von Hagen, J., "Interstate risk sharing in Germany: 1970-2006", *Oxford Economic Papers*, Vol. 65, No 1, 2013, pp. 1-24.

85 Sorensen, B. and Yosha, O., "International risk sharing and European monetary unification", *Journal of International Economics*, Vol. 45, No 2, 1998, pp. 211-238; Afonso, A. and Furceri, D., "EMU enlargement, stabilization costs and insurance mechanisms", *Journal of International Money and Finance,* Vol. 27, No 2, 2008, pp. 169-187.

that larger holdings of foreign equities can lead to greater international risk sharing,[86] as can the integration of banking markets.[87] It was also believed that the euro would improve risk sharing by nurturing capital market integration among EU Member States.[88]

Empirical results from the literature on the pre-EMU and EMU periods are mixed.[89] Early evidence on the pre-EMU risk sharing patterns among European countries was provided by Sorensen and Yosha. They found that only 40% of GDP shocks was smoothed, with half of the smoothing achieved by government savings and the other half by private savings. Following the introduction of the euro, some studies have indicated that risk sharing among EU member states initially reached higher levels than during the pre-euro period,[90] even though the amount of smoothed shocks remained lower in Europe than in other regions. However, some studies have suggested that risk sharing actually declined after the introduction of the euro. For example, Afonso and Furceri, analysing a panel of 25 European countries, find that only 43% of shocks to GDP was smoothed before the start of EMU, almost entirely by private and public savings. They also show that this share decreased to 37% after the introduction of the euro, suggesting that euro area members have not benefited from additional risk sharing. Moreover, Furceri and Zdzienicka,[91] using an unbalanced panel of 15 euro area countries, show that the amount of unsmoothed shocks in periods of recession is significantly larger than in normal times, and this is particularly true for severe downturns that are persistent and unanticipated. This result is largely driven by the lack of consumption smoothing provided by private savings via the credit channel. In general, the existing literature shows that levels of risk sharing have remained substantially lower in the euro area since the introduction of the euro than within regions of a federation such as the United States. Finally, some papers have suggested that risk sharing may have weakened in countries under fiscal stress and undergoing adjustment programmes, because government savings increased at a time in which GDP collapsed.[92] At the same time, Cimadomo et al.[93] have recently shown, on the basis of a restricted sample of 11 euro area countries and focusing only on private consumption, that the activation of financial assistance through the European Financial Stability Facility (EFSF)/European Stability Mechanism (ESM) has enhanced risk sharing in the euro area (see Box 2).

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86 Sorensen, B., Wu, Y.-T., Yosha, O. and Zhu, Y., "Home bias and international risk sharing: Twin puzzles separated at birth", *Journal of International Money and Finance*, Vol. 26, No 4, 2007, pp. 587-605.

87 Demyanyk, Y., Ostergaard, C. and Sorensen, B., op. cit.

88 Sorensen, B. and Yosha, O., "International risk sharing and European monetary unification", op. cit.

89 For a survey of the literature on risk sharing in EMU, see Ioannou, D. and Schäfer, D., "Risk sharing in EMU: key insights from a literature review", *SUERF Policy Note*, Issue No 21, SUERF, November 2017.

90 Kalemli-Ozcan, S., Sorensen, B. and Yosha, O., "Asymmetric shocks and risk sharing in a monetary union: updated evidence and policy implications for Europe", in Huizinga, H. and Jonung, L. (eds.), *The Internationalization of Asset Ownership in Europe*, Cambridge University Press: New York, 2005.

91 Furceri, D. and Zdzienicka, A., "The Euro Area Crisis: Need for a Supranational Fiscal Risk Sharing Mechanism?", *Open Economies Review*, Vol. 26, No 4, September 2015, pp. 683-710.

92 Kalemli-Ozcan, S., Luttini, E. and Sorensen, B., "Debt crises and risk sharing: the role of markets versus sovereigns", *NBER Working Paper*, No 19914, National Bureau of Economic Research, February 2014.

93 Cimadomo, J., Furtuna, O. and Giuliodori, M., "Private and public risk sharing in the euro area", *Working Paper Series*, ECB, forthcoming.

## Box 1
### Estimating the contribution of financial and fiscal tools to risk sharing: the methodology

**Prepared by Alexander Popov**

Asdrubali, Sorensen and Yosha, and Asdrubali and Kim, propose a methodology for quantifying the contribution of cross-border financial and fiscal transactions to risk sharing.[94] In their set-up, risk sharing is defined as a decoupling of aggregate consumption growth from aggregate output growth. The methodology is based on a decomposition of the growth in per-capita gross domestic product in country i at time t, GDPit, as follows:[95]

GDPit = (GDPit – GNPit) + (GNPit – GDIit) + (GDIit – Cit) + Cit

The first component, GDPit – GNPit, designated the "capital channel", captures the difference between per-capita gross national product and per-capita gross domestic product. This includes, for example, income on financial assets held abroad and labour income from employment abroad. The second channel, GNPit – GDIit, designated the "fiscal channel", captures the difference between per-capita gross national product and per-capita gross disposable income. This includes mainly cross-border transfers between governments (e.g. EU structural funds) or, in the United States, federal transfers. It also includes transfers between individuals (i.e. remittances), although these are typically smaller in size (therefore, in the literature, the channel is generally labelled as "fiscal"). The third channel, GDIit – Cit, designated the "credit channel", captures the difference between per-capita gross disposable income and per-capita consumption. This includes, for example, borrowing abroad by individuals and governments, either in credit markets or through supranational insurance mechanisms such as the ESM.[96] The first two channels capture ex-ante risk sharing, as they refer to financial arrangements made before per-capita GDP growth is realised. The last channel captures ex-post risk sharing, as it refers to financial arrangements made after the shock to per-capita GDP has taken place.

Since 2016 an indicator based on this decomposition has been included on a regular basis in the ECB's "Financial Integration in Europe" report. The analysis presented there includes a fourth channel, designated the "price channel" and constructed as the difference between the CPI and the GDP deflator. The idea underlying this channel is that even in the absence of risk sharing through capital, fiscal or credit channels, economic agents may share risks via valuation effects of output in terms of consumption.

94 Asdrubali, P., Sorensen, B. and Yosha, O., op. cit.; Asdrubali, P. and Kim, S., "Dynamic risk sharing in the United States and Europe", *Journal of Monetary Economics*, Vol. 51, No 4, 2004, pp. 809-836.

95 As in Asdrubali, P., Sorensen, B. and Yosha, O., op. cit., all variables are expressed in log differences.

96 The credit channel is not affected by inter-temporal smoothing, given that the latter would operate via borrowing or lending between sectors in the economy (e.g. between the private sector and the government), while in the proposed decomposition gross domestic income (*GDI*) and consumption (*C*) refer to the whole economy.

## 3 Estimating risk sharing in the euro area and in the United States

Patterns of risk sharing among, on the one hand, individual countries of the euro area and, on the other hand, individual states in the United States are remarkably different. Charts 3 and 4 show estimates of the capital channel, fiscal channel and credit channel for the euro area and the United States, on the basis of the methodology described in Box 1, for the period from 1997 until 2016.[97] Estimates are performed on windows of ten years, e.g. the bar for 2007 describes the average ten-year cumulative contribution of the capital channel, fiscal channel and credit channel during the period 1998-2007. For comparability with other works, the empirical analysis is based on the first 12 countries to adopt the euro.[98]

The first difference concerns the overall amount of shocks absorbed via risk sharing channels in these two regions. While in the euro area around 80% of a shock to country-specific GDP growth routinely remains unsmoothed, in the United States at most 40% of a shock to state-specific GDP is unsmoothed. Second, while in the United States the credit channel accounts for about 20% of risk sharing over the sample period, in the euro area its contribution is negative, although small.[99] A negative contribution to risk sharing via the credit channel in the euro area implies borrowing abroad in economic good times and repayment of the loans in economic bad times, adding volatility to consumption in a pro-cyclical way.[100] These findings suggest that a complete banking union is a fundamental prerequisite for the credit channel to contribute positively to risk sharing, as the case of the United States emphasises. Third, the fiscal channel in the euro area helps smooth at most 5% of a country-specific shock, compared with close to 10% in the United States. Finally, the capital channel in the United States helps smooth between 30% and 35% of a state-specific shock, accounting for more than half of overall risk sharing. In the euro area, too, this channel explains the bulk of the observed cross-border risk sharing. However, with the exception of the period 1998-2009, its contribution is smaller than in the United States, amounting on average to around 20%.

97 The definition of some variables in the euro area and US datasets is in some cases slightly different. Alcidi, D'Imperio and Thirion, op. cit., adjusts the euro area dataset to make it fully comparable with the US dataset and shows that differences in results from the adjusted and unadjusted datasets are negligible.

98 Ireland is excluded from the analysis owing to unusually large revisions in some of the country's main macroeconomic statistics for 2015 that were made in July 2016. These revisions affected real GDP, some of its components and balance of payments figures; some of them would feed into the indicator in this chart although they would not indicate a change in risk sharing. See the box entitled "Tackling Measurement Challenges of Irish Economic Activity", *World Economic Outlook*, International Monetary Fund, April 2017, pp. 43-45, which also presents the timetable for resolving the measurement problems in the future.

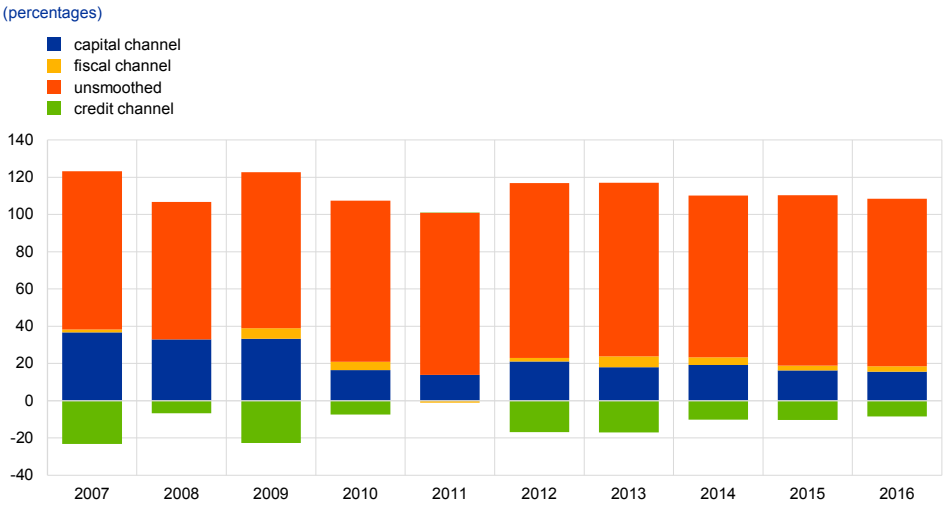
99 Other papers focusing on the euro area – and on a comparison of the pre-crisis and post-crisis periods – also find that the degree of risk sharing was not very severely hampered in the second sub-sample (see, e.g., Milano, V., "Risk sharing in the euro zone: the role of European institutions", *CeLEG Working Paper*, No 01/17, LUISS University, March 2017).

100 On the pro-cyclicality of cross-border lending, see also Albertazzi, U. and Bottero, M., "Foreign Bank Lending: Evidence from the Global Financial Crisis", *Journal of International Economics*, Vol. 92, Supplement 1, 2014, pp. S22-S35.

In conclusion, the evidence for the United States is fairly consistent with earlier studies, finding a large contribution from private financial channels to risk sharing.[101] Overall, between 60% and 80% of a shock to state-specific output growth is smoothed through private and public channels, with financial markets smoothing more than 50%, and with fiscal transactions accounting for the rest. In the euro area, around 80% of a country-specific shock remains unsmoothed, with capital markets helping to smooth between 20% and 40% of a shock, the fiscal channel's contribution negligible and credit markets typically reducing the smoothing of GDP shocks. At the same time, as highlighted in Box 2, European institutions seem to have contributed positively to risk sharing in recent years.

**Chart 3**

Consumption risk sharing in the euro area and its channels

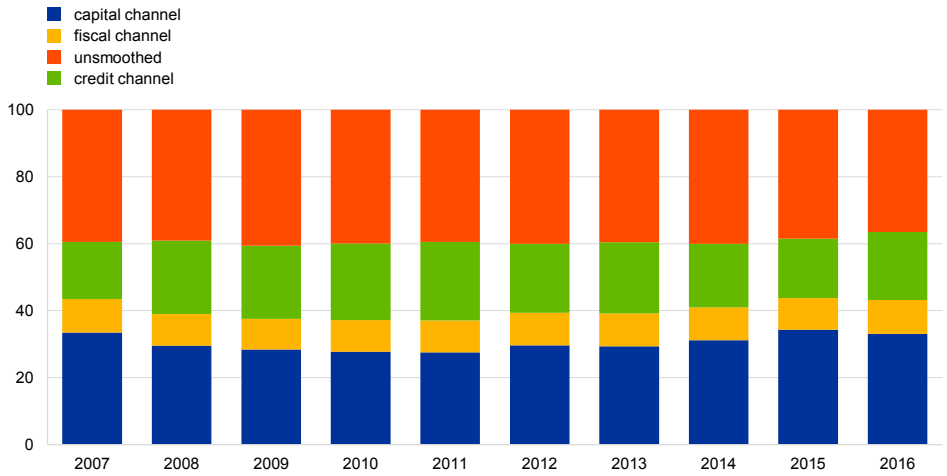



Source: ECB calculations.
Notes: The contributions of the channels are calculated using a vector-autoregression (VAR) model whose parameters are estimated over a ten-year rolling window of annual data. Bars display the proportion of a one-standard-deviation shock to domestic GDP growth that is absorbed by each risk sharing channel. The shares are computed on the basis of the cumulative impact of the shock on the variables capturing each risk sharing channel over a ten-year horizon. Year-to-year variation in the shares reflects changes in the re-estimated model parameters. The remaining portion represents the share of the shock to country-specific real GDP growth that remains unsmoothed and is fully reflected in country-specific consumption growth. The individual bars can go below 0% and above 100% if one or more of the channels involved has a dis-smoothing effect on country-specific consumption growth. The shares in each bar total 100%.

[101] See, for instance, Asdrubali, P., Sorensen, B. and Yosha, O., op. cit.

**Chart 4**

Consumption risk sharing in the Unites States and its channels




Source: ECB calculations.
Notes: See Chart 3.

## Box 2

## The role of European institutions and official assistance in risk sharing

**Prepared by Jacopo Cimadomo**

This box illustrates the role of EU institutions and EFSF/ESM[102] assistance in improving risk sharing in the euro area. While the literature generally focuses on private risk sharing channels (via capita and credit markets), recent papers have shown that risk sharing can be supported by public channels at the EMU level. Indeed, a significant amount of loans have been directed from European institutions, such as the European Commission, the EFSF and the ESM, to more vulnerable countries. Transfers from the European Union generally take the form of EU structural funds, although these funds are not designed for stabilisation purposes but rather to support economic convergence. Loans from the EFSF/ESM have been directed to euro area countries in the context of official programmes, with a view to recapitalising banks and supporting the financing needs of countries which had lost access to credit markets. EFSF/ESM loans can be thought of as an ex-post risk sharing device, ensuring, at least indirectly, a certain degree of shock smoothing in euro area countries. For example, official assistance through EFSF/ESM loans may have helped the governments of the receiving countries to maintain a certain level of public expenditure. It may have helped to finance public salaries and pensions, which otherwise would have been cut even more severely (e.g. in case of a sovereign default). This may have contributed to sustaining private (and public) consumption.

Two recent papers have looked at this channel: Milano[103] and Cimadomo et al.[104] Both papers focus on the role played by European institutions in enhancing risk sharing in the euro area, especially during the recent crisis. Based on different methodologies, they both find that institutions have a

[102] See the article entitled "The European Stability Mechanism", *Monthly Bulletin*, ECB, July 2011.
[103] Milano, V., op. cit.
[104] Cimadomo, J., Furtuna, O. and Giuliodori, M., op. cit.

positive effect on consumption risk sharing in the euro area. In particular, Cimadomo et al., using a sample of 11 euro area countries over the period 2000-15, show that the degree of absorption of country-specific shocks increased by about 17 percentage points from the activation of the EFSF in 2010, followed by the ESM in 2012.[105] Milano, using a similar sample of euro area countries, finds even stronger effects.

It should be noted that official loans via the EFSF/ESM are accounted for under the credit channel. While, in the empirical analysis shown in Chart 3, this channel contributes negatively to risk sharing in the euro area, it covers both cross-border lending via private-sector entities and official lending via supranational institutions. Milano shows that the former contributes negatively to the credit channel while supranational institutions contribute positively.

## 4 Conclusions

A consensus has emerged from the experience with the Great Recession that the euro area's institutional architecture is in need of reform to enhance its capacity to deal with large economic shocks. In this context, the publication of the Five Presidents' Report on Completing Europe's Economic and Monetary Union triggered an ongoing debate in the policy domain as well as in academia on ways to improve EMU's economic resilience. This debate has been influenced by findings of the empirical literature that identify and quantify risk sharing channels within federations and the euro area. This literature typically finds a more limited degree of risk sharing in the euro area than in the United States. It also finds that higher shock absorption in the United States results mainly from more effective private risk sharing via credit and capital markets. Fiscal risk sharing also plays a more prominent role in the United States, given the latter's different institutional and political architecture and in particular its sizeable federal budget.

In this context, important institutional steps towards a genuine Economic and Monetary Union in Europe have already been taken in recent years. First, the European Stability Mechanism was created in 2012 to provide conditional financial assistance to solvent euro area countries experiencing financing problems. Second, the European banking union was launched in 2014, building on the Single Supervisory Mechanism and the Single Resolution Mechanism. It ensures a consistent application of EU banking rules, thereby reducing risks in the banking sector related to, for example, exposure of national banking systems to their sovereigns.

Looking ahead, further reform is needed, along mainly three dimensions: first, euro area countries need to enhance their internal capacity to deal with macroeconomic shocks, in particular by effectively reducing vulnerabilities in their economies, banking sectors and public finances. Economic resilience needs to be improved via

[105] This indicates that, following a 1% shock to country-specific GDP, 0.17 percentage point of it is smoothed through official assistance via EFSF/ESM loans on average in the considered sample of 11 euro area countries.

structural reforms that support potential growth and increase market flexibility. In this context the Five Presidents' Report calls for a "significant and sustained convergence towards similarly resilient economies" in the euro area, so that risk sharing is based on the insurance principle and not on permanent transfers. At the same time, euro area countries should use the current favourable economic environment to build fiscal buffers and reduce debt ratios in line with the requirements of the Stability and Growth Pact framework. This will be important to weather future economic shocks.

Second, efficient and integrated financial markets are a core prerequisite for efficient private risk sharing in the euro area. In this context, a true capital markets union could significantly help to diversify and reduce risk. An action plan was adopted by the European Commission in 2015 setting out a list of key measures to ensure more diversified sources of finance for companies and achieve a true single market for capital in Europe. In its mid-term review of the plan in June 2017 the Commission pointed to progress regarding, among other things, the development of venture capital markets and the market for securitisation, as well as better access for companies to public markets. At the same time, new priorities were communicated, for example to strengthen the effectiveness of supervision in order to accelerate market integration, to harness the potential of financial technology, or fintech, and to better use capital markets to strengthen bank lending and stability.

Completing banking union will reduce risks for taxpayers and break the remaining link between banks and national governments. A European deposit insurance scheme is essential for a truly integrated banking system and a single currency. A common backstop for the Single Resolution Fund – which could be provided by the ESM as proposed for example in the European Commission's December 2017 Communication[106] on deepening EMU – would further strengthen banking union. A European deposit insurance scheme coupled with a credible common backstop will underpin depositor confidence in the banking union as a whole, notably by offering protection even in the case of large shocks to (a part of) a given country's banking sector.[107] Breaking the bank-sovereign nexus will also require measures to reduce the home bias in the sovereign holdings of banks. Several proposals have been put forward in this context, ranging from regulatory penalties for concentrated sovereign exposures to a more general reform of the regulatory treatment of sovereign exposures.[108] The report of the European Systemic Risk Board's High-Level Task Force on Safe Assets suggests that the creation of a euro area-wide low-risk asset could help to weaken the bank-sovereign nexus.[109] All these proposals need to be carefully evaluated, among other things in terms of their impact on financial stability in the euro area.

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106 See "Further steps towards completing Europe's Economic and Monetary Union: a roadmap", communication from the European Commission to the European Parliament, the European Council, the Council and the European Central Bank, 6 December 2017.

107 See "Financial Integration in Europe", ECB, 2016.

108 See "ESRB report on the regulatory treatment of sovereign exposures", European Systemic Risk Board, March 2015.

109 See Volume 1 of ESRB High-Level Task Force on Safe Assets, "Sovereign bond-backed securities: a feasibility study", European Systemic Risk Board, January 2018.

Third, the euro area would benefit from a central fiscal stabilisation function which can support national economic stabilisers in the presence of large economic shocks and thereby make EMU more resilient. There are many ways a euro area fiscal capacity could be implemented, for example an unemployment benefit scheme or a euro area budget for investment. Each of these options has its own technical and political challenges and benefits. It will be essential, though, to maximise positive effects on the functioning of EMU while at the same time preserving incentives for sound fiscal policymaking and addressing structural weaknesses at the national level. The aim should not be to actively fine-tune national economic cycles or to equalise revenues. This is in line with the design principles described in the Five Presidents' Report, which says that a fiscal capacity should not entail permanent transfers in one direction.

Finally, progress towards fiscal union and stronger financial union in the euro area is likely to be mutually reinforcing. More efficient capital markets, for example, would reduce the need for stabilisation via other channels, such as fiscal and monetary policy. At the same time, fiscal union and stronger common EU institutions may strengthen cross-border financial activities.

# Statistics

## Contents



## Further information

| | |
|---|---|
| ECB statistics can be accessed from the Statistical Data Warehouse (SDW): | http://sdw.ecb.europa.eu/ |
| Data from the statistics section of the Economic Bulletin are available from the SDW: | http://sdw.ecb.europa.eu/reports.do?node=1000004813 |
| A comprehensive Statistics Bulletin can be found in the SDW: | http://sdw.ecb.europa.eu/reports.do?node=1000004045 |
| 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 |

## Conventions used in the tables

| | |
|---|---|
| - | data do not exist/data are not applicable |
| . | data are not yet available |
| ... | nil or negligible |
| (p) | provisional |
| s.a. | seasonally adjusted |
| n.s.a. | non-seasonally adjusted |

# 1 External environment

## 1.1 Main trading partners, GDP and CPI

| | GDP [1] (period-on-period percentage changes) | | | | | | CPI (annual percentage changes) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | G20 | United States | United Kingdom | Japan | China | Memo item: euro area | OECD countries | | United States | United Kingdom (HICP) | Japan | China | Memo item: euro area [2] (HICP) |
| | | | | | | | Total | excluding food and energy | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 2015 | 3.5 | 2.9 | 2.3 | 1.4 | 6.9 | 2.1 | 0.6 | 1.7 | 0.1 | 0.0 | 0.8 | 1.4 | 0.0 |
| 2016 | 3.2 | 1.5 | 1.9 | 0.9 | 6.7 | 1.8 | 1.1 | 1.8 | 1.3 | 0.7 | -0.1 | 2.0 | 0.2 |
| 2017 | 3.8 | 2.3 | 1.8 | 1.7 | 6.9 | 2.4 | 2.3 | 1.8 | 2.1 | 2.7 | 0.5 | 1.6 | 1.5 |
| 2017 Q1 | 0.9 | 0.3 | 0.3 | 0.5 | 1.4 | 0.6 | 2.4 | 1.9 | 2.5 | 2.1 | 0.3 | 1.4 | 1.8 |
| Q2 | 1.0 | 0.8 | 0.2 | 0.6 | 1.9 | 0.7 | 2.1 | 1.8 | 1.9 | 2.7 | 0.4 | 1.4 | 1.5 |
| Q3 | 1.0 | 0.8 | 0.5 | 0.6 | 1.8 | 0.7 | 2.2 | 1.8 | 2.0 | 2.8 | 0.6 | 1.6 | 1.4 |
| Q4 | 1.0 | 0.6 | 0.4 | 0.4 | 1.6 | 0.7 | 2.3 | 1.9 | 2.1 | 3.0 | 0.6 | 1.8 | 1.4 |
| 2017 Oct. | - | - | - | - | - | - | 2.2 | 1.9 | 2.0 | 3.0 | 0.2 | 1.9 | 1.4 |
| Nov. | - | - | - | - | - | - | 2.4 | 1.9 | 2.2 | 3.1 | 0.6 | 1.7 | 1.5 |
| Dec. | - | - | - | - | - | - | 2.3 | 1.9 | 2.1 | 3.0 | 1.0 | 1.8 | 1.4 |
| 2018 Jan. | - | - | - | - | - | - | 2.2 | 1.8 | 2.1 | 3.0 | 1.4 | 1.5 | 1.3 |
| Feb. | - | - | - | - | - | - | 2.2 | 1.9 | 2.2 | 2.7 | 1.5 | 2.9 | 1.1 |
| Mar. | - | - | - | - | - | - | . | . | 2.4 | 2.5 | 1.1 | 2.1 | 1.3 |

Sources: Eurostat (col. 3, 6, 10, 13); BIS (col. 9, 11, 12); OECD (col. 1, 2, 4, 5, 7, 8).
1) Quarterly data seasonally adjusted; annual data unadjusted.
2) Data refer to the changing composition of the euro area.

## 1.2 Main trading partners, Purchasing Managers' Index and world trade

| | Purchasing Managers' Surveys (diffusion indices; s.a.) | | | | | | | | | Merchandise imports [1] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Composite Purchasing Managers' Index | | | | | | Global Purchasing Managers' Index [2] | | | | | |
| | Global [2] | United States | United Kingdom | Japan | China | Memo item: euro area | Manufacturing | Services | New export orders | Global | Advanced economies | Emerging market economies |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 2015 | 53.1 | 55.8 | 56.2 | 51.4 | 50.4 | 53.8 | 51.8 | 53.7 | 50.4 | 1.1 | 3.6 | -0.4 |
| 2016 | 51.6 | 52.4 | 53.4 | 50.5 | 51.4 | 53.3 | 51.8 | 52.0 | 50.2 | 1.0 | 1.1 | 1.0 |
| 2017 | 53.3 | 54.3 | 54.7 | 52.5 | 51.8 | 56.4 | 53.9 | 53.8 | 52.8 | 5.3 | 3.2 | 6.7 |
| 2017 Q2 | 53.1 | 53.6 | 54.8 | 53.0 | 51.3 | 56.6 | 52.4 | 53.3 | 51.6 | 0.3 | 1.6 | -0.6 |
| Q3 | 53.3 | 54.9 | 54.1 | 51.8 | 51.9 | 56.0 | 52.7 | 53.5 | 51.9 | 1.4 | 1.1 | 1.6 |
| Q4 | 53.4 | 54.6 | 55.2 | 52.6 | 51.9 | 57.2 | 53.5 | 53.4 | 52.1 | 1.5 | 1.6 | 1.4 |
| 2018 Q1 | 53.6 | 54.6 | 53.5 | 52.1 | 53.0 | 57.0 | 53.8 | 53.5 | 52.2 | . | . | . |
| 2017 Nov. | 53.2 | 54.5 | 54.9 | 52.2 | 51.6 | 57.5 | 53.7 | 53.1 | 52.2 | 1.4 | 0.9 | 1.7 |
| Dec. | 53.4 | 54.1 | 54.8 | 52.2 | 53.0 | 58.1 | 54.2 | 53.1 | 52.5 | 1.5 | 1.6 | 1.4 |
| 2018 Jan. | 53.5 | 53.8 | 53.4 | 52.8 | 53.7 | 58.8 | 54.5 | 53.2 | 53.2 | 3.0 | 2.6 | 3.2 |
| Feb. | 54.3 | 55.8 | 54.5 | 52.2 | 53.3 | 57.1 | 53.8 | 54.5 | 52.4 | 2.9 | 2.5 | 3.2 |
| Mar. | 52.8 | 54.2 | 52.5 | 51.3 | 51.8 | 55.2 | 53.1 | 52.8 | 51.2 | . | . | . |
| Apr. | . | 54.8 | . | . | . | 55.2 | . | . | . | . | . | . |

Sources: Markit (col. 1-9); CPB Netherlands Bureau for Economic Policy Analysis and ECB calculations (col. 10-12).
1) Global and advanced economies exclude the euro area. Annual and quarterly data are period-on-period percentages; monthly data are 3-month-on-3-month percentages. All data are seasonally adjusted.
2) Excluding the euro area.

# 2 Financial developments

## 2.1 Money market interest rates
(percentages per annum; period averages)

| | Euro area [1] | | | | | United States | Japan |
|---|---|---|---|---|---|---|---|
| | Overnight deposits (EONIA) | 1-month deposits (EURIBOR) | 3-month deposits (EURIBOR) | 6-month deposits (EURIBOR) | 12-month deposits (EURIBOR) | 3-month deposits (LIBOR) | 3-month deposits (LIBOR) |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2015 | -0.11 | -0.07 | -0.02 | 0.05 | 0.17 | 0.32 | 0.09 |
| 2016 | -0.32 | -0.34 | -0.26 | -0.17 | -0.03 | 0.74 | -0.02 |
| 2017 | -0.35 | -0.37 | -0.33 | -0.26 | -0.15 | 1.26 | -0.02 |
| 2017 Sep. | -0.36 | -0.37 | -0.33 | -0.27 | -0.17 | 1.32 | -0.03 |
| Oct. | -0.36 | -0.37 | -0.33 | -0.27 | -0.18 | 1.36 | -0.04 |
| Nov. | -0.35 | -0.37 | -0.33 | -0.27 | -0.19 | 1.43 | -0.03 |
| Dec. | -0.34 | -0.37 | -0.33 | -0.27 | -0.19 | 1.60 | -0.02 |
| 2018 Jan. | -0.36 | -0.37 | -0.33 | -0.27 | -0.19 | 1.73 | -0.03 |
| Feb. | -0.36 | -0.37 | -0.33 | -0.27 | -0.19 | 1.87 | -0.06 |
| Mar. | -0.36 | -0.37 | -0.33 | -0.27 | -0.19 | 2.17 | -0.05 |

Source: ECB.
1) Data refer to the changing composition of the euro area, see the General Notes.

## 2.2 Yield curves
(End of period; rates in percentages per annum; spreads in percentage points)

| | Spot rates | | | | | Spreads | | | Instantaneous forward rates | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Euro area [1, 2] | | | | | Euro area [1, 2] | United States | United Kingdom | Euro area [1, 2] | | | |
| | 3 months | 1 year | 2 years | 5 years | 10 years | 10 years - 1 year | 10 years - 1 year | 10 years - 1 year | 1 year | 2 years | 5 years | 10 years |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 2015 | -0.45 | -0.40 | -0.35 | 0.02 | 0.77 | 1.17 | 1.66 | 1.68 | -0.35 | -0.22 | 0.82 | 1.98 |
| 2016 | -0.93 | -0.82 | -0.80 | -0.47 | 0.26 | 1.08 | 1.63 | 1.17 | -0.78 | -0.75 | 0.35 | 1.35 |
| 2017 | -0.78 | -0.74 | -0.64 | -0.17 | 0.52 | 1.26 | 0.67 | 0.83 | -0.66 | -0.39 | 0.66 | 1.56 |
| 2017 Sep. | -0.76 | -0.75 | -0.70 | -0.26 | 0.52 | 1.27 | 1.04 | 0.98 | -0.73 | -0.54 | 0.65 | 1.68 |
| Oct. | -0.79 | -0.79 | -0.74 | -0.32 | 0.44 | 1.23 | 0.95 | 0.87 | -0.78 | -0.60 | 0.55 | 1.61 |
| Nov. | -0.78 | -0.76 | -0.70 | -0.28 | 0.44 | 1.20 | 0.79 | 0.88 | -0.73 | -0.52 | 0.56 | 1.52 |
| Dec. | -0.78 | -0.74 | -0.64 | -0.17 | 0.52 | 1.26 | 0.67 | 0.83 | -0.66 | -0.39 | 0.66 | 1.56 |
| 2018 Jan. | -0.63 | -0.64 | -0.52 | 0.05 | 0.71 | 1.35 | 0.81 | 1.07 | -0.59 | -0.21 | 0.96 | 1.60 |
| Feb. | -0.66 | -0.68 | -0.57 | 0.01 | 0.71 | 1.39 | 0.80 | 0.81 | -0.64 | -0.26 | 0.96 | 1.65 |
| Mar. | -0.67 | -0.70 | -0.61 | -0.10 | 0.55 | 1.25 | 0.65 | 0.61 | -0.67 | -0.35 | 0.75 | 1.47 |

Source: ECB.
1) Data refer to the changing composition of the euro area, see the General Notes.
2) ECB calculations based on underlying data provided by EuroMTS and ratings provided by Fitch Ratings.

## 2.3 Stock market indices
(index levels in points; period averages)

| | Dow Jones EURO STOXX indices | | | | | | | | | | | | United States | Japan |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Benchmark | | Main industry indices | | | | | | | | | | | |
| | Broad index | 50 | Basic materials | Consumer services | Consumer goods | Oil and gas | Financials | Industrials | Technology | Utilities | Telecoms | Health care | Standard & Poor's 500 | Nikkei 225 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 2015 | 356.2 | 3,444.1 | 717.4 | 261.9 | 628.2 | 299.9 | 189.8 | 500.6 | 373.2 | 278.0 | 377.7 | 821.3 | 2,061.1 | 19,203.8 |
| 2016 | 321.6 | 3,003.7 | 620.7 | 250.9 | 600.1 | 278.9 | 148.7 | 496.0 | 375.8 | 248.6 | 326.9 | 770.9 | 2,094.7 | 16,920.5 |
| 2017 | 376.9 | 3,491.0 | 757.3 | 268.6 | 690.4 | 307.9 | 182.3 | 605.5 | 468.4 | 272.7 | 339.2 | 876.3 | 2,449.1 | 20,209.0 |
| 2017 Sep. | 380.7 | 3,507.1 | 750.1 | 261.2 | 701.2 | 298.1 | 185.9 | 615.8 | 480.3 | 288.2 | 331.8 | 883.8 | 2,492.8 | 19,924.4 |
| Oct. | 391.7 | 3,614.7 | 791.0 | 267.8 | 724.9 | 306.3 | 190.2 | 636.2 | 501.1 | 290.1 | 330.9 | 895.9 | 2,557.0 | 21,267.5 |
| Nov. | 391.7 | 3,601.4 | 802.3 | 269.2 | 727.7 | 315.4 | 188.3 | 640.6 | 508.6 | 294.8 | 317.3 | 854.9 | 2,593.6 | 22,525.1 |
| Dec. | 389.7 | 3,564.7 | 796.2 | 274.9 | 719.0 | 313.5 | 189.1 | 641.2 | 491.3 | 291.3 | 316.1 | 839.7 | 2,664.3 | 22,769.9 |
| 2018 Jan. | 398.4 | 3,612.2 | 822.3 | 276.1 | 731.7 | 323.4 | 196.3 | 661.2 | 504.6 | 284.9 | 312.6 | 848.1 | 2,789.8 | 23,712.2 |
| Feb. | 380.6 | 3,426.7 | 783.7 | 264.7 | 703.6 | 306.9 | 190.1 | 629.7 | 488.3 | 263.2 | 291.3 | 792.0 | 2,705.2 | 21,991.7 |
| Mar. | 375.9 | 3,374.3 | 769.1 | 258.0 | 699.7 | 308.0 | 183.6 | 622.9 | 498.9 | 268.9 | 292.0 | 775.6 | 2,702.8 | 21,395.5 |

Source: ECB.

# 2 Financial developments

## 2.4 MFI interest rates on loans to and deposits from households (new business) [1), 2)]

(Percentages per annum; period average, unless otherwise indicated)

| | Deposits | | | | Revolving loans and overdrafts | Extended credit card credit | Loans for consumption | | | Loans to sole proprietors and unincorporated partnerships | Loans for house purchase | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Overnight | Redeemable at notice of up to 3 months | With an agreed maturity of: | | | | By initial period of rate fixation | | APRC [3)] | | By initial period of rate fixation | | | | APRC [3)] | Composite cost-of-borrowing indicator |
| | | | Up to 2 years | Over 2 years | | | Floating rate and up to 1 year | Over 1 year | | | Floating rate and up to 1 year | Over 1 and up to 5 years | Over 5 and up to 10 years | Over 10 years | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 2017 Mar. | 0.06 | 0.47 | 0.40 | 0.74 | 6.38 | 16.70 | 4.99 | 5.62 | 6.08 | 2.41 | 1.74 | 1.88 | 1.85 | 1.81 | 2.25 | 1.85 |
| Apr. | 0.06 | 0.47 | 0.39 | 0.73 | 6.33 | 16.70 | 4.83 | 5.58 | 5.96 | 2.39 | 1.73 | 1.89 | 1.91 | 1.85 | 2.26 | 1.87 |
| May | 0.06 | 0.46 | 0.39 | 0.81 | 6.31 | 16.70 | 5.09 | 5.78 | 6.22 | 2.46 | 1.73 | 1.90 | 1.90 | 1.87 | 2.23 | 1.87 |
| June | 0.05 | 0.46 | 0.38 | 0.77 | 6.30 | 16.82 | 4.68 | 5.74 | 6.19 | 2.43 | 1.69 | 1.89 | 1.91 | 1.89 | 2.22 | 1.87 |
| July | 0.05 | 0.45 | 0.38 | 0.76 | 6.26 | 16.81 | 4.95 | 5.84 | 6.28 | 2.38 | 1.75 | 1.91 | 1.90 | 1.90 | 2.22 | 1.88 |
| Aug. | 0.05 | 0.44 | 0.35 | 0.75 | 6.23 | 16.80 | 5.33 | 5.89 | 6.34 | 2.38 | 1.75 | 2.00 | 1.92 | 1.94 | 2.21 | 1.91 |
| Sep. | 0.05 | 0.45 | 0.35 | 0.74 | 6.26 | 16.80 | 5.07 | 5.71 | 6.21 | 2.37 | 1.70 | 1.93 | 1.96 | 1.96 | 2.20 | 1.89 |
| Oct. | 0.05 | 0.44 | 0.35 | 0.75 | 6.23 | 16.80 | 4.92 | 5.68 | 6.15 | 2.43 | 1.68 | 1.91 | 1.93 | 1.96 | 2.18 | 1.88 |
| Nov. | 0.05 | 0.45 | 0.33 | 0.75 | 6.21 | 16.80 | 4.73 | 5.69 | 6.14 | 2.38 | 1.67 | 1.92 | 1.95 | 1.94 | 2.17 | 1.87 |
| Dec. | 0.05 | 0.44 | 0.33 | 0.73 | 6.09 | 16.84 | 4.47 | 5.39 | 5.80 | 2.31 | 1.69 | 1.86 | 1.92 | 1.87 | 2.15 | 1.83 |
| 2018 Jan. | 0.04 | 0.44 | 0.35 | 0.69 | 6.16 | 16.90 | 5.02 | 5.83 | 6.28 | 2.30 | 1.67 | 1.87 | 1.92 | 1.90 | 2.14 | 1.84 |
| Feb. [p] | 0.04 | 0.44 | 0.34 | 0.69 | 6.19 | 16.85 | 4.70 | 5.70 | 6.18 | 2.37 | 1.64 | 1.88 | 1.93 | 1.91 | 2.14 | 1.84 |

Source: ECB.

1) Data refer to the changing composition of the euro area.

2) Including non-profit institutions serving households.

3) Annual percentage rate of charge (APRC).

## 2.5 MFI interest rates on loans to and deposits from non-financial corporations (new business) [1), 2)]

(Percentages per annum; period average, unless otherwise indicated)

| | Deposits | | | Revolving loans and overdrafts | Other loans by size and initial period of rate fixation | | | | | | | | | Composite cost-of-borrowing indicator |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Overnight | With an agreed maturity of: | | | up to EUR 0.25 million | | | over EUR 0.25 and up to 1 million | | | over EUR 1 million | | | |
| | | Up to 2 years | Over 2 years | | Floating rate and up to 3 months | Over 3 months and up to 1 year | Over 1 year | Floating rate and up to 3 months | Over 3 months and up to 1 year | Over 1 year | Floating rate and up to 3 months | Over 3 months and up to 1 year | Over 1 year | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 2017 Mar. | 0.06 | 0.08 | 0.58 | 2.58 | 2.51 | 2.79 | 2.36 | 1.76 | 1.79 | 1.72 | 1.30 | 1.63 | 1.57 | 1.82 |
| Apr. | 0.05 | 0.10 | 0.40 | 2.55 | 2.54 | 2.68 | 2.35 | 1.79 | 1.78 | 1.71 | 1.34 | 1.50 | 1.64 | 1.81 |
| May | 0.05 | 0.10 | 0.43 | 2.51 | 2.49 | 2.77 | 2.38 | 1.76 | 1.73 | 1.72 | 1.20 | 1.47 | 1.63 | 1.76 |
| June | 0.05 | 0.06 | 0.43 | 2.50 | 2.46 | 2.68 | 2.34 | 1.74 | 1.71 | 1.67 | 1.27 | 1.42 | 1.55 | 1.76 |
| July | 0.05 | 0.11 | 0.35 | 2.45 | 2.45 | 2.76 | 2.36 | 1.74 | 1.75 | 1.72 | 1.23 | 1.33 | 1.66 | 1.74 |
| Aug. | 0.04 | 0.10 | 0.36 | 2.43 | 2.49 | 2.71 | 2.41 | 1.74 | 1.78 | 1.78 | 1.24 | 1.44 | 1.58 | 1.75 |
| Sep. | 0.04 | 0.07 | 0.44 | 2.42 | 2.44 | 2.73 | 2.39 | 1.71 | 1.68 | 1.73 | 1.19 | 1.46 | 1.58 | 1.73 |
| Oct. | 0.04 | 0.11 | 0.40 | 2.39 | 2.39 | 2.69 | 2.36 | 1.70 | 1.66 | 1.70 | 1.23 | 1.35 | 1.60 | 1.73 |
| Nov. | 0.04 | 0.08 | 0.30 | 2.36 | 2.43 | 2.60 | 2.35 | 1.70 | 1.61 | 1.69 | 1.23 | 1.32 | 1.56 | 1.72 |
| Dec. | 0.04 | 0.06 | 0.32 | 2.35 | 2.40 | 2.45 | 2.29 | 1.70 | 1.66 | 1.66 | 1.34 | 1.27 | 1.52 | 1.71 |
| 2018 Jan. | 0.04 | 0.05 | 0.39 | 2.35 | 2.39 | 2.51 | 2.33 | 1.65 | 1.61 | 1.73 | 1.12 | 1.38 | 1.60 | 1.68 |
| Feb. [p] | 0.04 | 0.09 | 0.42 | 2.37 | 2.37 | 2.48 | 2.33 | 1.66 | 1.62 | 1.74 | 1.17 | 1.35 | 1.63 | 1.71 |

Source: ECB.

1) Data refer to the changing composition of the euro area.

2) In accordance with the ESA 2010, in December 2014 holding companies of non-financial groups were reclassified from the non-financial corporations sector to the financial corporations sector.

# 2 Financial developments

## 2.6 Debt securities issued by euro area residents, by sector of the issuer and initial maturity

(EUR billions; transactions during the month and end-of-period outstanding amounts; nominal values)

| | Outstanding amounts | | | | | | | Gross issues [1] | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | MFIs (including Euro-system) | Non-MFI corporations | | | General government | | Total | MFIs (including Euro-system) | Non-MFI corporations | | | General government | |
| | | | Financial corporations other than MFIs | FVCs | Non-financial corporations | Central govern-ment | Other general govern-ment | | | Financial corporations other than MFIs | FVCs | Non-financial corporations | Central govern-ment | Other general govern-ment |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| **Short-term** | | | | | | | | | | | | | | |
| 2015 | 1,269 | 517 | 147 | . | 62 | 478 | 65 | 347 | 161 | 37 | . | 33 | 82 | 34 |
| 2016 | 1,241 | 518 | 136 | . | 59 | 466 | 62 | 349 | 161 | 45 | . | 31 | 79 | 33 |
| 2017 | 1,239 | 519 | 154 | . | 70 | 438 | 57 | 368 | 167 | 54 | . | 37 | 79 | 31 |
| 2017 Sep. | 1,316 | 531 | 162 | . | 81 | 478 | 65 | 372 | 163 | 61 | . | 37 | 82 | 29 |
| Oct. | 1,290 | 528 | 159 | . | 84 | 457 | 62 | 384 | 175 | 57 | . | 41 | 74 | 36 |
| Nov. | 1,281 | 527 | 153 | . | 81 | 460 | 61 | 354 | 159 | 48 | . | 34 | 87 | 25 |
| Dec. | 1,239 | 519 | 154 | . | 70 | 438 | 57 | 304 | 139 | 50 | . | 30 | 55 | 29 |
| 2018 Jan. | 1,269 | 533 | 151 | . | 77 | 447 | 61 | 399 | 195 | 37 | . | 41 | 91 | 36 |
| Feb. | 1,277 | 539 | 149 | . | 80 | 444 | 65 | 347 | 170 | 35 | . | 34 | 78 | 30 |
| **Long-term** | | | | | | | | | | | | | | |
| 2015 | 15,249 | 3,786 | 3,287 | . | 1,057 | 6,481 | 637 | 217 | 68 | 46 | . | 13 | 81 | 9 |
| 2016 | 15,398 | 3,695 | 3,234 | . | 1,186 | 6,643 | 641 | 220 | 62 | 53 | . | 18 | 79 | 8 |
| 2017 | 15,349 | 3,560 | 3,137 | . | 1,190 | 6,819 | 642 | 249 | 66 | 75 | . | 17 | 84 | 7 |
| 2017 Sep. | 15,361 | 3,567 | 3,178 | . | 1,177 | 6,804 | 634 | 224 | 56 | 56 | . | 17 | 90 | 5 |
| Oct. | 15,341 | 3,579 | 3,163 | . | 1,183 | 6,777 | 640 | 249 | 76 | 57 | . | 21 | 85 | 10 |
| Nov. | 15,373 | 3,594 | 3,129 | . | 1,187 | 6,819 | 643 | 229 | 55 | 64 | . | 23 | 79 | 8 |
| Dec. | 15,349 | 3,560 | 3,137 | . | 1,190 | 6,819 | 642 | 213 | 46 | 92 | . | 14 | 54 | 6 |
| 2018 Jan. | 15,366 | 3,569 | 3,147 | . | 1,173 | 6,841 | 636 | 302 | 99 | 75 | . | 14 | 109 | 5 |
| Feb. | 15,396 | 3,566 | 3,165 | . | 1,171 | 6,864 | 629 | 214 | 56 | 51 | . | 12 | 88 | 7 |

Source: ECB.

1) For the purpose of comparison, annual data refer to the average monthly figure over the year.

## 2.7 Growth rates and outstanding amounts of debt securities and listed shares

(EUR billions; percentage changes)

| | Debt securities | | | | | | | Listed shares | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | MFIs (including Eurosystem) | Non-MFI corporations | | | General government | | Total | MFIs | Financial corporations other than MFIs | Non-financial corporations |
| | | | Financial corporations other than MFIs | FVCs | Non-financial corporations | Central government | Other general government | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| **Oustanding amount** | | | | | | | | | | | |
| 2015 | 16,517.8 | 4,303.1 | 3,434.4 | . | 1,118.7 | 6,959.2 | 702.4 | 6,814.3 | 584.3 | 985.2 | 5,244.9 |
| 2016 | 16,639.6 | 4,212.9 | 3,369.9 | . | 1,245.1 | 7,108.1 | 703.5 | 7,089.5 | 537.6 | 1,097.8 | 5,454.1 |
| 2017 | 16,588.1 | 4,079.3 | 3,291.8 | . | 1,259.8 | 7,257.3 | 699.8 | 7,959.0 | 613.6 | 1,266.1 | 6,079.3 |
| 2017 Sep. | 16,676.6 | 4,097.8 | 3,339.5 | . | 1,257.7 | 7,282.0 | 699.6 | 7,932.9 | 657.7 | 1,232.6 | 6,042.6 |
| Oct. | 16,631.0 | 4,106.6 | 3,322.0 | . | 1,266.3 | 7,233.8 | 702.3 | 8,164.0 | 649.6 | 1,297.1 | 6,217.3 |
| Nov. | 16,654.2 | 4,120.6 | 3,282.3 | . | 1,268.1 | 7,279.8 | 703.5 | 8,005.6 | 638.4 | 1,252.4 | 6,114.8 |
| Dec. | 16,588.1 | 4,079.3 | 3,291.8 | . | 1,259.8 | 7,257.3 | 699.8 | 7,959.0 | 613.6 | 1,266.1 | 6,079.3 |
| 2018 Jan. | 16,634.8 | 4,102.0 | 3,298.1 | . | 1,249.9 | 7,287.7 | 697.1 | 8,208.1 | 666.7 | 1,336.1 | 6,205.3 |
| Feb. | 16,672.4 | 4,105.3 | 3,314.8 | . | 1,251.5 | 7,307.4 | 693.4 | 7,924.4 | 639.8 | 1,295.7 | 5,988.9 |
| **Growth rate** | | | | | | | | | | | |
| 2015 | 0.3 | -7.0 | 5.7 | . | 4.7 | 1.8 | 0.6 | 1.1 | 4.2 | 1.6 | 0.6 |
| 2016 | 0.3 | -3.0 | -1.7 | . | 7.7 | 2.1 | -0.1 | 0.5 | 1.2 | 0.9 | 0.4 |
| 2017 | 1.3 | -0.5 | 0.1 | . | 6.3 | 2.1 | 0.5 | 1.1 | 6.1 | 2.8 | 0.3 |
| 2017 Sep. | 1.4 | -1.5 | 1.3 | . | 7.7 | 2.3 | -0.4 | 0.9 | 6.1 | 2.0 | 0.2 |
| Oct. | 1.0 | -1.0 | -0.6 | . | 7.4 | 1.9 | -0.4 | 0.9 | 6.0 | 2.8 | 0.1 |
| Nov. | 1.1 | -0.7 | -0.2 | . | 6.6 | 1.8 | 0.4 | 1.0 | 6.1 | 2.8 | 0.1 |
| Dec. | 1.3 | -0.5 | 0.1 | . | 6.3 | 2.1 | 0.5 | 1.1 | 6.1 | 2.8 | 0.3 |
| 2018 Jan. | 1.2 | -0.4 | 0.2 | . | 5.9 | 1.9 | 0.5 | 1.1 | 5.8 | 2.7 | 0.3 |
| Feb. | 1.3 | -1.0 | 1.2 | . | 5.6 | 2.2 | -0.8 | 0.9 | 3.1 | 2.8 | 0.4 |

Source: ECB.

# 2 Financial developments

## 2.8 Effective exchange rates [1)]

(period averages; index: 1999 Q1=100)

| | EER-19 | | | | | | EER-38 | |
|---|---|---|---|---|---|---|---|---|
| | Nominal | Real CPI | Real PPI | Real GDP deflator | Real ULCM [2)] | Real ULCT | Nominal | Real CPI |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 2015 | 91.7 | 87.6 | 88.6 | 82.8 | 80.9 | 88.4 | 105.7 | 86.9 |
| 2016 | 94.4 | 89.5 | 90.8 | 84.9 | 80.1 | 89.4 | 109.7 | 89.2 |
| 2017 | 96.6 | 91.4 | 92.0 | 85.9 | 79.9 | 90.1 | 112.0 | 90.5 |
| 2017 Q2 | 95.3 | 90.3 | 91.0 | 84.8 | 78.8 | 89.0 | 110.1 | 89.0 |
| Q3 | 98.6 | 93.2 | 93.8 | 87.7 | 80.7 | 91.7 | 114.5 | 92.3 |
| Q4 | 98.6 | 93.1 | 93.6 | 87.5 | 80.5 | 91.5 | 115.0 | 92.5 |
| 2018 Q1 | 99.6 | 93.9 | 94.8 | . | . | . | 117.0 | 93.8 |
| 2017 Oct. | 98.6 | 93.1 | 93.6 | - | - | - | 114.8 | 92.4 |
| Nov. | 98.5 | 93.0 | 93.4 | - | - | - | 115.0 | 92.4 |
| Dec. | 98.8 | 93.3 | 93.7 | - | - | - | 115.3 | 92.6 |
| 2018 Jan. | 99.4 | 93.9 | 94.4 | - | - | - | 116.1 | 93.2 |
| Feb. | 99.6 | 93.9 | 94.8 | - | - | - | 117.3 | 94.0 |
| Mar. | 99.7 | 94.0 | 95.1 | - | - | - | 117.7 | 94.2 |
| *Percentage change versus previous month* | | | | | | | | |
| 2018 Mar. | 0.1 | 0.1 | 0.3 | - | - | - | 0.4 | 0.2 |
| *Percentage change versus previous year* | | | | | | | | |
| 2018 Mar. | 6.1 | 5.4 | 6.0 | - | - | - | 8.4 | 7.2 |

Source: ECB.

1) For a definition of the trading partner groups and other information see the General Notes to the Statistics Bulletin.

2) ULCM-deflated series are available only for the EER-18 trading partner group.

## 2.9 Bilateral exchange rates

(period averages; units of national currency per euro)

| | Chinese renminbi | Croatian kuna | Czech koruna | Danish krone | Hungarian forint | Japanese yen | Polish zloty | Pound sterling | Romanian leu | Swedish krona | Swiss franc | US Dollar |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 2015 | 6.973 | 7.614 | 27.279 | 7.459 | 309.996 | 134.314 | 4.184 | 0.726 | 4.4454 | 9.353 | 1.068 | 1.110 |
| 2016 | 7.352 | 7.533 | 27.034 | 7.445 | 311.438 | 120.197 | 4.363 | 0.819 | 4.4904 | 9.469 | 1.090 | 1.107 |
| 2017 | 7.629 | 7.464 | 26.326 | 7.439 | 309.193 | 126.711 | 4.257 | 0.877 | 4.5688 | 9.635 | 1.112 | 1.130 |
| 2017 Q2 | 7.560 | 7.430 | 26.535 | 7.438 | 309.764 | 122.584 | 4.215 | 0.861 | 4.5532 | 9.692 | 1.084 | 1.102 |
| Q3 | 7.834 | 7.426 | 26.085 | 7.438 | 306.418 | 130.349 | 4.258 | 0.898 | 4.5822 | 9.557 | 1.131 | 1.175 |
| Q4 | 7.789 | 7.533 | 25.650 | 7.443 | 311.597 | 132.897 | 4.232 | 0.887 | 4.6189 | 9.793 | 1.162 | 1.177 |
| 2018 Q1 | 7.815 | 7.438 | 25.402 | 7.447 | 311.027 | 133.166 | 4.179 | 0.883 | 4.6553 | 9.971 | 1.165 | 1.229 |
| 2017 Oct. | 7.789 | 7.509 | 25.766 | 7.443 | 309.951 | 132.763 | 4.263 | 0.891 | 4.5895 | 9.614 | 1.155 | 1.176 |
| Nov. | 7.772 | 7.551 | 25.538 | 7.442 | 311.891 | 132.392 | 4.227 | 0.888 | 4.6347 | 9.848 | 1.164 | 1.174 |
| Dec. | 7.807 | 7.539 | 25.645 | 7.443 | 313.163 | 133.638 | 4.203 | 0.883 | 4.6348 | 9.937 | 1.169 | 1.184 |
| 2018 Jan. | 7.840 | 7.436 | 25.452 | 7.445 | 309.269 | 135.255 | 4.163 | 0.883 | 4.6491 | 9.820 | 1.172 | 1.220 |
| Feb. | 7.807 | 7.440 | 25.320 | 7.446 | 311.735 | 133.293 | 4.165 | 0.884 | 4.6559 | 9.938 | 1.154 | 1.235 |
| Mar. | 7.798 | 7.438 | 25.429 | 7.449 | 312.194 | 130.858 | 4.209 | 0.883 | 4.6613 | 10.161 | 1.168 | 1.234 |
| *Percentage change versus previous month* | | | | | | | | | | | | |
| 2018 Mar. | -0.1 | 0.0 | 0.4 | 0.0 | 0.1 | -1.8 | 1.1 | -0.1 | 0.1 | 2.2 | 1.2 | -0.1 |
| *Percentage change versus previous year* | | | | | | | | | | | | |
| 2018 Mar. | 5.8 | 0.2 | -5.9 | 0.2 | 0.8 | 8.4 | -1.8 | 2.0 | 2.5 | 6.6 | 9.1 | 15.5 |

Source: ECB.

# 2 Financial developments

## 2.10 Euro area balance of payments, financial account

(EUR billions, unless otherwise indicated; outstanding amounts at end of period; transactions during period)

| | Total [1] | | | Direct investment | | Portfolio investment | | Net financial derivatives | Other investment | | Reserve assets | Memo: Gross external debt |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Assets | Liabilities | Net | Assets | Liabilities | Assets | Liabilities | | Assets | Liabilities | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| | Outstanding amounts (international investment position) | | | | | | | | | | | |
| 2017 Q1 | 25,245.3 | 25,690.0 | -444.7 | 11,172.4 | 9,021.1 | 8,225.5 | 10,715.6 | -60.7 | 5,181.5 | 5,953.3 | 726.6 | 14,231.8 |
| Q2 | 24,718.0 | 25,150.8 | -432.8 | 10,918.3 | 8,790.0 | 8,148.6 | 10,598.6 | -46.0 | 5,014.4 | 5,762.3 | 682.7 | 13,852.5 |
| Q3 | 24,554.9 | 24,904.9 | -350.0 | 10,603.8 | 8,508.0 | 8,314.0 | 10,609.1 | -57.2 | 5,019.4 | 5,787.9 | 674.8 | 13,740.7 |
| Q4 | 24,648.1 | 24,798.0 | -149.8 | 10,561.0 | 8,510.7 | 8,499.4 | 10,594.2 | -51.2 | 4,969.3 | 5,693.0 | 669.7 | 13,514.5 |
| | *Outstanding amounts as a percentage of GDP* | | | | | | | | | | | |
| 2017 Q4 | 220.7 | 222.0 | -1.3 | 94.6 | 76.2 | 76.1 | 94.9 | -0.5 | 44.5 | 51.0 | 6.0 | 121.0 |
| | Transactions | | | | | | | | | | | |
| 2017 Q1 | 627.8 | 581.4 | 46.4 | 181.8 | 191.9 | 175.8 | 78.7 | 23.5 | 249.1 | 310.8 | -2.3 | - |
| Q2 | 214.7 | 137.8 | 76.9 | 32.4 | 15.5 | 172.0 | 150.5 | -0.5 | 12.3 | -28.2 | -1.4 | - |
| Q3 | 69.9 | -56.9 | 126.9 | -153.1 | -146.3 | 188.2 | 53.8 | -10.3 | 44.6 | 35.6 | 0.5 | - |
| Q4 | 147.0 | -32.0 | 179.0 | 74.4 | 23.6 | 102.3 | 27.0 | 6.0 | -37.5 | -82.6 | 1.9 | - |
| 2017 Sep. | 54.0 | -25.4 | 79.3 | 14.0 | 4.5 | 67.2 | 28.9 | -1.9 | -31.8 | -58.8 | 6.4 | - |
| Oct. | 230.0 | 182.2 | 47.8 | 74.5 | 42.3 | 30.5 | -23.3 | 0.3 | 127.4 | 163.1 | -2.7 | - |
| Nov. | 87.4 | 45.0 | 42.4 | 12.7 | 7.6 | 62.1 | 53.6 | 2.6 | 3.9 | -16.2 | 6.2 | - |
| Dec. | -170.3 | -259.1 | 88.8 | -12.8 | -26.4 | 9.7 | -3.3 | 3.1 | -168.7 | -229.5 | -1.6 | - |
| 2018 Jan. | 311.8 | 296.9 | 14.9 | 37.4 | 11.2 | 87.9 | 66.7 | 0.6 | 183.6 | 219.0 | 2.3 | - |
| Feb. | 92.5 | 77.9 | 14.6 | 29.8 | 25.0 | 26.5 | -15.8 | 0.0 | 36.2 | 68.7 | -0.1 | - |
| | *12-month cumulated transactions* | | | | | | | | | | | |
| 2018 Feb. | 894.5 | 445.2 | 449.2 | 76.9 | -23.7 | 620.5 | 323.3 | 4.7 | 188.5 | 145.7 | 3.8 | - |
| | *12-month cumulated transactions as a percentage of GDP* | | | | | | | | | | | |
| 2018 Feb. | 8.0 | 4.0 | 4.0 | 0.7 | -0.2 | 5.6 | 2.9 | 0.0 | 1.7 | 1.3 | 0.0 | - |

Source: ECB.

1) Net financial derivatives are included in total assets.

# 3 Economic activity

## 3.1 GDP and expenditure components

(quarterly data seasonally adjusted; annual data unadjusted)

| | GDP | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Domestic demand | | | | | | | | External balance [1] | | |
| | | Total | Private consumption | Government consumption | Gross fixed capital formation | | | | Changes in inventories [2] | Total | Exports [1] | Imports [1] |
| | | | | | | Total construction | Total machinery | Intellectual property products | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| | Current prices (EUR billions) | | | | | | | | | | | |
| 2015 | 10,515.8 | 10,031.0 | 5,753.8 | 2,169.4 | 2,078.4 | 1,016.6 | 638.1 | 418.0 | 29.4 | 484.9 | 4,846.9 | 4,362.0 |
| 2016 | 10,790.1 | 10,312.1 | 5,891.4 | 2,220.1 | 2,190.5 | 1,052.3 | 674.9 | 457.8 | 10.0 | 478.0 | 4,938.2 | 4,460.2 |
| 2017 | 11,168.6 | 10,664.0 | 6,073.7 | 2,273.9 | 2,287.0 | 1,113.4 | 712.7 | 455.4 | 29.5 | 504.6 | 5,286.3 | 4,781.7 |
| 2017 Q1 | 2,748.6 | 2,631.7 | 1,504.6 | 562.7 | 560.1 | 273.1 | 172.2 | 113.4 | 4.3 | 116.9 | 1,297.5 | 1,180.6 |
| Q2 | 2,782.0 | 2,663.7 | 1,515.3 | 566.3 | 573.0 | 277.4 | 176.1 | 118.2 | 9.1 | 118.3 | 1,309.0 | 1,190.7 |
| Q3 | 2,810.3 | 2,678.1 | 1,522.5 | 570.5 | 573.5 | 279.7 | 179.9 | 112.5 | 11.6 | 132.2 | 1,326.6 | 1,194.4 |
| Q4 | 2,835.1 | 2,695.9 | 1,532.5 | 574.6 | 583.1 | 284.0 | 184.4 | 113.3 | 5.7 | 139.2 | 1,363.1 | 1,224.0 |
| | *as a percentage of GDP* | | | | | | | | | | | |
| 2017 | 100.0 | 95.5 | 54.4 | 20.4 | 20.5 | 10.0 | 6.4 | 4.1 | 0.3 | 4.5 | - | - |
| | Chain-linked volumes (prices for the previous year) | | | | | | | | | | | |
| | *quarter-on-quarter percentage changes* | | | | | | | | | | | |
| 2017 Q1 | 0.6 | 0.1 | 0.5 | 0.2 | 0.1 | 1.5 | 0.9 | -4.2 | - | - | 1.4 | 0.3 |
| Q2 | 0.7 | 1.0 | 0.5 | 0.4 | 2.0 | 1.1 | 2.1 | 4.2 | - | - | 1.2 | 1.8 |
| Q3 | 0.7 | 0.2 | 0.3 | 0.4 | -0.3 | 0.2 | 2.0 | -5.1 | - | - | 1.7 | 0.7 |
| Q4 | 0.7 | 0.3 | 0.2 | 0.3 | 1.2 | 0.7 | 2.3 | 0.3 | - | - | 2.2 | 1.6 |
| | *annual percentage changes* | | | | | | | | | | | |
| 2015 | 2.1 | 2.0 | 1.8 | 1.3 | 3.3 | 0.5 | 5.4 | 7.2 | - | - | 6.4 | 6.7 |
| 2016 | 1.8 | 2.3 | 2.0 | 1.8 | 4.6 | 2.5 | 5.6 | 8.4 | - | - | 3.4 | 4.8 |
| 2017 | 2.4 | 1.9 | 1.7 | 1.2 | 2.9 | 3.3 | 5.2 | -1.2 | - | - | 5.1 | 4.3 |
| 2017 Q1 | 2.1 | 1.9 | 1.7 | 1.0 | 4.1 | 3.2 | 3.6 | 6.9 | - | - | 4.8 | 4.7 |
| Q2 | 2.4 | 2.3 | 1.9 | 1.1 | 3.5 | 4.0 | 4.4 | 1.0 | - | - | 4.5 | 4.5 |
| Q3 | 2.7 | 2.0 | 1.9 | 1.4 | 2.5 | 3.5 | 6.2 | -4.9 | - | - | 5.8 | 4.5 |
| Q4 | 2.8 | 1.6 | 1.5 | 1.4 | 3.0 | 3.6 | 7.6 | -5.0 | - | - | 6.6 | 4.4 |
| | *contributions to quarter-on-quarter percentage changes in GDP; percentage points* | | | | | | | | | | | |
| 2017 Q1 | 0.6 | 0.2 | 0.3 | 0.1 | 0.0 | 0.1 | 0.1 | -0.2 | -0.2 | 0.5 | - | - |
| Q2 | 0.7 | 0.9 | 0.3 | 0.1 | 0.4 | 0.1 | 0.1 | 0.2 | 0.2 | -0.2 | - | - |
| Q3 | 0.7 | 0.2 | 0.2 | 0.1 | -0.1 | 0.0 | 0.1 | -0.2 | 0.0 | 0.5 | - | - |
| Q4 | 0.7 | 0.3 | 0.1 | 0.1 | 0.2 | 0.1 | 0.2 | 0.0 | -0.1 | 0.4 | - | - |
| | *contributions to annual percentage changes in GDP; percentage points* | | | | | | | | | | | |
| 2015 | 2.1 | 2.0 | 1.0 | 0.3 | 0.6 | 0.0 | 0.3 | 0.3 | 0.0 | 0.1 | - | - |
| 2016 | 1.8 | 2.2 | 1.1 | 0.4 | 0.9 | 0.2 | 0.3 | 0.3 | -0.2 | -0.4 | - | - |
| 2017 | 2.4 | 1.8 | 0.9 | 0.2 | 0.6 | 0.3 | 0.3 | 0.0 | 0.1 | 0.6 | - | - |
| 2017 Q1 | 2.1 | 1.8 | 0.9 | 0.2 | 0.8 | 0.3 | 0.2 | 0.3 | -0.1 | 0.2 | - | - |
| Q2 | 2.4 | 2.2 | 1.0 | 0.2 | 0.7 | 0.4 | 0.3 | 0.0 | 0.2 | 0.2 | - | - |
| Q3 | 2.7 | 1.9 | 1.0 | 0.3 | 0.5 | 0.3 | 0.4 | -0.2 | 0.1 | 0.8 | - | - |
| Q4 | 2.8 | 1.6 | 0.8 | 0.3 | 0.6 | 0.4 | 0.5 | -0.2 | -0.2 | 1.2 | - | - |

Sources: Eurostat and ECB calculations.

1) Exports and imports cover goods and services and include cross-border intra-euro area trade.

2) Including acquisitions less disposals of valuables.

# 3 Economic activity

## 3.2 Value added by economic activity

(quarterly data seasonally adjusted; annual data unadjusted)

| | Gross value added (basic prices) | | | | | | | | | | | Taxes less subsidies on products |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Agriculture, forestry and fishing | Manufacturing energy and utilities | Const-ruction | Trade, transport, accom-modation and food services | Infor-mation and com-munica-tion | Finance and insurance | Real estate | Professional, business and support services | Public ad-ministration, education, health and social work | Arts, enter-tainment and other services | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| | Current prices (EUR billions) | | | | | | | | | | | |
| 2015 | 9,443.6 | 153.9 | 1,900.3 | 468.5 | 1,782.4 | 433.2 | 464.0 | 1,073.1 | 1,026.2 | 1,811.6 | 330.4 | 1,072.2 |
| 2016 | 9,680.7 | 151.6 | 1,936.8 | 489.0 | 1,831.1 | 451.3 | 454.0 | 1,100.6 | 1,071.1 | 1,857.5 | 337.6 | 1,109.4 |
| 2017 | 10,012.7 | 164.4 | 1,998.9 | 513.6 | 1,907.6 | 467.7 | 453.1 | 1,132.5 | 1,123.4 | 1,906.1 | 345.4 | 1,156.0 |
| 2017 Q1 | 2,464.7 | 40.5 | 490.5 | 125.7 | 469.2 | 115.0 | 112.8 | 279.7 | 275.2 | 470.7 | 85.2 | 284.0 |
| Q2 | 2,494.1 | 40.8 | 497.2 | 127.9 | 476.4 | 116.7 | 113.0 | 282.1 | 279.2 | 474.8 | 86.0 | 287.8 |
| Q3 | 2,519.9 | 41.3 | 504.1 | 129.5 | 479.7 | 117.7 | 113.9 | 284.6 | 283.2 | 478.9 | 86.9 | 290.4 |
| Q4 | 2,541.5 | 41.8 | 510.9 | 131.4 | 483.4 | 118.5 | 113.5 | 286.0 | 286.5 | 482.0 | 87.3 | 293.6 |
| | *as a percentage of value added* | | | | | | | | | | | |
| 2017 | 100.0 | 1.6 | 20.0 | 5.1 | 19.1 | 4.7 | 4.5 | 11.3 | 11.2 | 19.0 | 3.4 | - |
| | Chain-linked volumes (prices for the previous year) | | | | | | | | | | | |
| | *quarter-on-quarter percentage changes* | | | | | | | | | | | |
| 2017 Q1 | 0.7 | 1.5 | 0.3 | 1.3 | 1.2 | 1.2 | -0.1 | 0.5 | 1.4 | 0.2 | 0.1 | 0.4 |
| Q2 | 0.7 | -0.3 | 1.1 | 0.8 | 0.7 | 0.9 | 0.6 | 0.2 | 1.0 | 0.5 | 0.4 | 0.9 |
| Q3 | 0.7 | 0.5 | 1.5 | 0.4 | 0.4 | 1.3 | 0.1 | 0.5 | 0.8 | 0.5 | 0.7 | 0.3 |
| Q4 | 0.7 | 0.1 | 1.6 | 1.1 | 0.6 | 0.8 | 0.3 | 0.3 | 0.8 | 0.2 | 0.2 | 0.4 |
| | *annual percentage changes* | | | | | | | | | | | |
| 2015 | 1.9 | 3.1 | 3.9 | 0.4 | 1.8 | 3.3 | -0.3 | 0.7 | 2.9 | 0.9 | 1.1 | 3.3 |
| 2016 | 1.7 | -1.2 | 1.9 | 1.7 | 2.0 | 2.9 | 0.2 | 1.0 | 2.8 | 1.3 | 1.2 | 2.8 |
| 2017 | 2.3 | 0.9 | 3.0 | 2.7 | 2.9 | 4.5 | 0.1 | 1.3 | 3.6 | 1.3 | 1.1 | 2.6 |
| 2017 Q1 | 2.0 | 0.5 | 1.8 | 2.4 | 2.8 | 4.9 | -0.6 | 1.2 | 3.5 | 1.1 | 0.9 | 2.6 |
| Q2 | 2.4 | 0.1 | 3.0 | 3.1 | 3.3 | 5.1 | 0.1 | 1.2 | 3.1 | 1.3 | 0.9 | 3.0 |
| Q3 | 2.7 | 0.9 | 3.9 | 3.0 | 3.3 | 4.5 | 0.3 | 1.5 | 4.0 | 1.5 | 1.4 | 2.6 |
| Q4 | 2.8 | 1.8 | 4.6 | 3.6 | 3.0 | 4.3 | 1.0 | 1.5 | 4.0 | 1.3 | 1.4 | 2.0 |
| | *contributions to quarter-on-quarter percentage changes in value added; percentage points* | | | | | | | | | | | |
| 2017 Q1 | 0.7 | 0.0 | 0.1 | 0.1 | 0.2 | 0.1 | 0.0 | 0.1 | 0.2 | 0.0 | 0.0 | - |
| Q2 | 0.7 | 0.0 | 0.2 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | - |
| Q3 | 0.7 | 0.0 | 0.3 | 0.0 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | - |
| Q4 | 0.7 | 0.0 | 0.3 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | - |
| | *contributions to annual percentage changes in value added; percentage points* | | | | | | | | | | | |
| 2015 | 1.9 | 0.1 | 0.8 | 0.0 | 0.3 | 0.2 | 0.0 | 0.1 | 0.3 | 0.2 | 0.0 | - |
| 2016 | 1.7 | 0.0 | 0.4 | 0.1 | 0.4 | 0.1 | 0.0 | 0.1 | 0.3 | 0.2 | 0.0 | - |
| 2017 | 2.3 | 0.0 | 0.6 | 0.1 | 0.5 | 0.2 | 0.0 | 0.2 | 0.4 | 0.2 | 0.0 | - |
| 2017 Q1 | 2.0 | 0.0 | 0.4 | 0.1 | 0.5 | 0.2 | 0.0 | 0.1 | 0.4 | 0.2 | 0.0 | - |
| Q2 | 2.4 | 0.0 | 0.6 | 0.2 | 0.6 | 0.2 | 0.0 | 0.1 | 0.3 | 0.2 | 0.0 | - |
| Q3 | 2.7 | 0.0 | 0.8 | 0.2 | 0.6 | 0.2 | 0.0 | 0.2 | 0.4 | 0.3 | 0.1 | - |
| Q4 | 2.8 | 0.0 | 0.9 | 0.2 | 0.6 | 0.2 | 0.0 | 0.2 | 0.4 | 0.3 | 0.0 | - |

Sources: Eurostat and ECB calculations.

# 3 Economic activity

## 3.3 Employment [1)]

(quarterly data seasonally adjusted; annual data unadjusted)

| | Total | By employment status | | By economic activity | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Employees | Self-employed | Agriculture, forestry and fishing | Manufacturing, energy and utilities | Construction | Trade, transport, accommodation and food services | Information and communication | Finance and insurance | Real estate | Professional, business and support services | Public administration, education, health and social work | Arts, entertainment and other services |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| **Persons employed** | | | | | | | | | | | | | |
| *as a percentage of total persons employed* | | | | | | | | | | | | | |
| 2015 | 100.0 | 85.2 | 14.8 | 3.3 | 14.9 | 6.0 | 24.8 | 2.7 | 2.6 | 1.0 | 13.3 | 24.3 | 7.1 |
| 2016 | 100.0 | 85.5 | 14.5 | 3.2 | 14.8 | 5.9 | 24.9 | 2.8 | 2.6 | 1.0 | 13.5 | 24.3 | 7.0 |
| 2017 | 100.0 | 85.8 | 14.2 | 3.2 | 14.7 | 5.9 | 24.9 | 2.8 | 2.5 | 1.0 | 13.7 | 24.2 | 7.0 |
| *annual percentage changes* | | | | | | | | | | | | | |
| 2015 | 1.0 | 1.2 | -0.3 | -1.2 | 0.2 | 0.0 | 1.3 | 1.4 | -0.2 | 1.4 | 2.8 | 1.0 | 0.5 |
| 2016 | 1.3 | 1.6 | -0.3 | -0.2 | 0.6 | -0.2 | 1.7 | 2.7 | 0.0 | 2.1 | 2.9 | 1.3 | 0.9 |
| 2017 | 1.6 | 2.0 | -0.4 | -0.2 | 1.1 | 1.5 | 1.7 | 3.2 | -0.9 | 2.2 | 3.4 | 1.3 | 1.4 |
| 2017 Q1 | 1.6 | 1.8 | 0.0 | 0.9 | 0.9 | 1.1 | 1.8 | 3.4 | -0.5 | 1.0 | 3.3 | 1.3 | 0.8 |
| Q2 | 1.6 | 2.0 | -0.6 | 0.1 | 1.1 | 1.1 | 1.8 | 3.4 | -0.8 | 2.6 | 3.3 | 1.2 | 1.4 |
| Q3 | 1.7 | 2.1 | -0.4 | -0.9 | 1.3 | 1.8 | 1.8 | 3.1 | -0.9 | 2.3 | 3.4 | 1.3 | 2.2 |
| Q4 | 1.6 | 1.9 | -0.4 | -0.7 | 1.2 | 2.2 | 1.4 | 3.1 | -1.3 | 2.8 | 3.5 | 1.3 | 1.1 |
| **Hours worked** | | | | | | | | | | | | | |
| *as a percentage of total hours worked* | | | | | | | | | | | | | |
| 2015 | 100.0 | 80.5 | 19.5 | 4.3 | 15.5 | 6.8 | 25.6 | 2.9 | 2.7 | 1.0 | 13.0 | 22.0 | 6.3 |
| 2016 | 100.0 | 80.8 | 19.2 | 4.2 | 15.4 | 6.7 | 25.7 | 2.9 | 2.7 | 1.0 | 13.2 | 22.0 | 6.2 |
| 2017 | 100.0 | 81.2 | 18.8 | 4.1 | 15.3 | 6.7 | 25.7 | 3.0 | 2.6 | 1.0 | 13.4 | 21.9 | 6.2 |
| *annual percentage changes* | | | | | | | | | | | | | |
| 2015 | 1.1 | 1.4 | -0.2 | -0.3 | 0.6 | 0.6 | 0.9 | 2.4 | -0.1 | 1.8 | 2.9 | 1.0 | 0.9 |
| 2016 | 1.2 | 1.6 | -0.1 | -0.3 | 0.6 | 0.0 | 1.5 | 2.1 | 0.6 | 2.2 | 2.9 | 1.0 | 0.9 |
| 2017 | 1.4 | 1.9 | -0.6 | -1.1 | 1.1 | 1.5 | 1.6 | 3.3 | -0.8 | 2.3 | 3.3 | 1.0 | 0.9 |
| 2017 Q1 | 1.2 | 1.7 | -0.7 | -1.0 | 0.7 | 1.2 | 1.4 | 3.4 | -0.1 | 0.9 | 3.2 | 0.8 | 0.1 |
| Q2 | 1.5 | 2.0 | -0.4 | -1.2 | 1.1 | 1.1 | 2.0 | 3.7 | -1.1 | 2.4 | 3.2 | 1.0 | 1.0 |
| Q3 | 1.8 | 2.3 | -0.2 | -1.0 | 1.6 | 1.9 | 2.1 | 3.4 | -0.4 | 2.3 | 3.5 | 1.1 | 1.8 |
| Q4 | 1.8 | 2.3 | -0.4 | -0.6 | 1.8 | 3.0 | 1.6 | 3.3 | -1.2 | 3.9 | 3.6 | 1.2 | 0.5 |
| **Hours worked per person employed** | | | | | | | | | | | | | |
| *annual percentage changes* | | | | | | | | | | | | | |
| 2015 | 0.1 | 0.1 | 0.1 | 0.9 | 0.3 | 0.5 | -0.4 | 1.0 | 0.1 | 0.3 | 0.1 | 0.0 | 0.3 |
| 2016 | -0.1 | -0.1 | 0.1 | -0.1 | 0.0 | 0.2 | -0.2 | -0.6 | 0.6 | 0.1 | 0.1 | -0.3 | 0.0 |
| 2017 | -0.2 | 0.0 | -0.2 | -0.9 | 0.0 | -0.1 | -0.1 | 0.1 | 0.0 | 0.1 | -0.1 | -0.3 | -0.4 |
| 2017 Q1 | -0.3 | -0.2 | -0.6 | -1.9 | -0.1 | 0.0 | -0.4 | 0.0 | 0.4 | -0.1 | -0.1 | -0.5 | -0.6 |
| Q2 | -0.1 | 0.0 | 0.2 | -1.3 | 0.1 | 0.0 | 0.2 | 0.3 | -0.3 | -0.2 | -0.2 | -0.3 | -0.5 |
| Q3 | 0.1 | 0.2 | 0.2 | 0.0 | 0.4 | 0.1 | 0.4 | 0.3 | 0.4 | 0.0 | 0.2 | -0.1 | -0.4 |
| Q4 | 0.2 | 0.3 | 0.0 | 0.1 | 0.6 | 0.8 | 0.2 | 0.2 | 0.1 | 1.1 | 0.1 | -0.1 | -0.6 |

Sources: Eurostat and ECB calculations.

1) Data for employment are based on the ESA 2010.

# 3 Economic activity

## 3.4 Labour force, unemployment and job vacancies

(seasonally adjusted, unless otherwise indicated)

| | Labour force, millions [1] | Under-employ-ment, % of labour force [1] | Unemployment | | | | | | | | | | | | Job vacancy rate [2] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Total | | Long-term unemploy-ment, % of labour force [1] | By age | | | | By gender | | | | | |
| | | | | | | Adult | | Youth | | Male | | Female | | | |
| | | | Millions | % of labour force | | Millions | % of labour force | Millions | % of labour force | Millions | % of labour force | Millions | % of labour force | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | | 14 |
| % of total in 2016 | | | 100.0 | | | 81.7 | | 18.3 | | 52.2 | | 47.8 | | | |
| 2015 | 160.717 | 4.6 | 17.469 | 10.9 | 5.6 | 14.304 | 9.8 | 3.165 | 22.3 | 9.262 | 10.7 | 8.207 | 11.1 | | 1.5 |
| 2016 | 162.012 | 4.3 | 16.255 | 10.0 | 5.0 | 13.290 | 9.0 | 2.964 | 20.9 | 8.483 | 9.7 | 7.771 | 10.4 | | 1.7 |
| 2017 | 162.635 | 4.1 | 14.754 | 9.1 | 4.4 | 12.086 | 8.1 | 2.669 | 18.8 | 7.636 | 8.7 | 7.118 | 9.5 | | 1.9 |
| 2017 Q1 | 161.766 | 4.3 | 15.377 | 9.5 | 4.8 | 12.617 | 8.5 | 2.760 | 19.5 | 7.951 | 9.1 | 7.426 | 9.9 | | 1.9 |
| Q2 | 162.351 | 4.2 | 14.864 | 9.1 | 4.5 | 12.151 | 8.2 | 2.713 | 19.1 | 7.685 | 8.8 | 7.179 | 9.6 | | 1.9 |
| Q3 | 163.317 | 4.0 | 14.587 | 9.0 | 4.2 | 11.953 | 8.0 | 2.634 | 18.5 | 7.571 | 8.6 | 7.016 | 9.3 | | 1.9 |
| Q4 | 163.107 | 3.9 | 14.187 | 8.7 | 4.2 | 11.621 | 7.8 | 2.566 | 18.0 | 7.338 | 8.4 | 6.850 | 9.1 | | 2.0 |
| 2017 Sep. | - | - | 14.457 | 8.9 | - | 11.837 | 8.0 | 2.620 | 18.4 | 7.493 | 8.5 | 6.963 | 9.2 | | - |
| Oct. | - | - | 14.317 | 8.8 | - | 11.717 | 7.9 | 2.600 | 18.2 | 7.406 | 8.5 | 6.912 | 9.2 | | - |
| Nov. | - | - | 14.186 | 8.7 | - | 11.625 | 7.8 | 2.560 | 17.9 | 7.329 | 8.4 | 6.857 | 9.1 | | - |
| Dec. | - | - | 14.059 | 8.6 | - | 11.520 | 7.7 | 2.539 | 17.8 | 7.279 | 8.3 | 6.780 | 9.0 | | - |
| 2018 Jan. | - | - | 14.057 | 8.6 | - | 11.529 | 7.7 | 2.528 | 17.7 | 7.283 | 8.3 | 6.774 | 9.0 | | - |
| Feb. | - | - | 13.916 | 8.5 | - | 11.396 | 7.7 | 2.520 | 17.7 | 7.246 | 8.3 | 6.670 | 8.9 | | - |

Sources: Eurostat and ECB calculations.

1) Not seasonally adjusted.

2) The job vacancy rate is equal to the number of job vacancies divided by the sum of the number of occupied posts and the number of job vacancies, expressed as a percentage.

## 3.5 Short-term business statistics

| | Industrial production | | | | | | Con-struction produc-tion | ECB indicator on industrial new orders | Retail sales | | | | New passenger car regis-trations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total (excluding construction) | Main Industrial Groupings | | | | | | | Total | Food, beverages, tobacco | Non-food | Fuel | |
| | | Manu-facturing | Inter-mediate goods | Capital goods | Consumer goods | Energy | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| % of total in 2015 | 100.0 | 88.7 | 32.1 | 34.5 | 21.8 | 11.6 | 100.0 | 100.0 | 100.0 | 40.4 | 52.5 | 7.1 | 100.0 |
| annual percentage changes | | | | | | | | | | | | | |
| 2015 | 2.6 | 2.9 | 1.4 | 7.0 | 2.2 | 0.8 | -0.6 | 3.4 | 2.9 | 1.6 | 3.9 | 2.8 | 8.8 |
| 2016 | 1.7 | 1.8 | 1.8 | 1.9 | 1.7 | 0.5 | 3.0 | 0.5 | 1.6 | 1.0 | 2.1 | 1.4 | 7.2 |
| 2017 | 3.0 | 3.2 | 3.7 | 3.9 | 1.5 | 1.3 | 2.9 | 7.9 | 2.2 | 1.4 | 3.1 | 0.9 | 5.6 |
| 2017 Q2 | 2.5 | 2.6 | 3.3 | 2.2 | 1.9 | 2.3 | 3.9 | 7.4 | 2.6 | 2.3 | 3.1 | 1.5 | 6.0 |
| Q3 | 4.0 | 4.4 | 4.6 | 6.0 | 1.7 | 1.5 | 2.7 | 8.8 | 2.5 | 1.3 | 4.0 | 0.4 | 5.5 |
| Q4 | 4.1 | 4.8 | 5.4 | 6.1 | 2.2 | -0.6 | 2.7 | 9.6 | 2.0 | 0.8 | 2.9 | 0.0 | 6.3 |
| 2018 Q1 | . | . | . | . | . | . | . | . | . | . | . | . | 5.3 |
| 2017 Oct. | 2.7 | 3.4 | 5.2 | 1.6 | 4.2 | -2.6 | 3.0 | 9.2 | 0.2 | -0.5 | 0.5 | -0.2 | 5.9 |
| Nov. | 4.7 | 5.4 | 4.9 | 9.2 | 0.5 | -0.7 | 2.7 | 10.4 | 3.7 | 1.7 | 5.5 | 0.4 | 8.6 |
| Dec. | 5.2 | 5.6 | 6.2 | 7.8 | 2.1 | 1.3 | 1.9 | 9.1 | 2.0 | 1.3 | 2.9 | -0.2 | 4.4 |
| 2018 Jan. | 3.7 | 6.0 | 5.2 | 8.8 | 3.0 | -8.9 | 6.9 | 9.2 | 1.5 | 0.0 | 3.0 | -1.0 | 6.4 |
| Feb. | 2.9 | 2.5 | 2.9 | 2.2 | 2.1 | 5.7 | 0.4 | 6.4 | 1.8 | 1.2 | 2.3 | -0.1 | 4.8 |
| Mar. | . | . | . | . | . | . | . | . | . | . | . | . | 4.8 |
| month-on-month percentage changes (s.a.) | | | | | | | | | | | | | |
| 2017 Oct. | 0.1 | 0.3 | 0.3 | 0.4 | 0.2 | -1.3 | 0.1 | 0.7 | -1.1 | -1.6 | -1.2 | -0.2 | -2.8 |
| Nov. | 1.5 | 1.6 | 0.7 | 2.7 | 0.4 | 2.5 | 0.3 | 1.8 | 2.0 | 1.4 | 2.9 | 0.5 | 4.4 |
| Dec. | -0.1 | -0.3 | 1.1 | -1.7 | 0.2 | 0.9 | 0.8 | 1.7 | -1.0 | -0.3 | -1.5 | -0.3 | 0.4 |
| 2018 Jan. | -0.6 | 0.2 | -1.1 | 0.6 | 0.3 | -5.4 | -0.8 | -2.1 | -0.3 | -0.7 | 0.0 | -0.1 | 0.1 |
| Feb. | -0.8 | -2.0 | -0.8 | -3.6 | -1.0 | 6.8 | -0.5 | 0.0 | 0.1 | 0.8 | -0.5 | 0.9 | -0.6 |
| Mar. | . | . | . | . | . | . | . | . | . | . | . | . | -0.3 |

Sources: Eurostat, ECB calculations, ECB experimental statistics (col. 8) and European Automobile Manufacturers Association (col. 13).

# 3 Economic activity

## 3.6 Opinion surveys
(seasonally adjusted)

| | European Commission Business and Consumer Surveys (percentage balances, unless otherwise indicated) | | | | | | | | Purchasing Managers' Surveys (diffusion indices) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Economic sentiment indicator (long-term average = 100) | Manufacturing industry | | Consumer confidence indicator | Construction confidence indicator | Retail trade confidence indicator | Service industries | | Purchasing Managers' Index (PMI) for manufacturing | Manufacturing output | Business activity for services | Composite output |
| | | Industrial confidence indicator | Capacity utilisation (%) | | | | Services confidence indicator | Capacity utilisation (%) | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1999-14 | 99.6 | -6.0 | 80.7 | -12.7 | -14.5 | -8.3 | 6.8 | - | 51.1 | 52.4 | 52.9 | 52.7 |
| 2015 | 103.6 | -3.1 | 81.4 | -6.2 | -22.5 | 1.6 | 9.2 | 88.4 | 52.2 | 53.4 | 54.0 | 53.8 |
| 2016 | 104.3 | -2.6 | 81.9 | -7.7 | -16.5 | 1.5 | 11.1 | 89.1 | 52.5 | 53.6 | 53.1 | 53.3 |
| 2017 | 110.7 | 4.5 | 83.3 | -2.5 | -4.0 | 3.3 | 14.6 | 89.8 | 57.4 | 58.5 | 55.6 | 56.4 |
| 2017 Q2 | 109.5 | 3.3 | 82.9 | -2.8 | -4.9 | 3.2 | 13.4 | 89.8 | 57.0 | 58.3 | 56.0 | 56.6 |
| Q3 | 111.5 | 5.4 | 83.5 | -1.5 | -2.1 | 2.9 | 14.9 | 89.9 | 57.4 | 58.0 | 55.3 | 56.0 |
| Q4 | 114.3 | 8.3 | 84.1 | -0.2 | 1.8 | 5.3 | 16.9 | 89.9 | 59.7 | 60.7 | 56.0 | 57.2 |
| 2018 Q1 | 113.9 | 7.8 | . | 0.5 | 4.7 | 3.7 | 16.9 | . | 58.2 | 58.9 | 56.4 | 57.0 |
| 2017 Nov. | 114.0 | 8.1 | - | 0.0 | 1.7 | 4.3 | 16.4 | - | 60.1 | 61.0 | 56.2 | 57.5 |
| Dec. | 115.3 | 8.8 | - | 0.5 | 3.1 | 6.0 | 18.0 | - | 60.6 | 62.2 | 56.6 | 58.1 |
| 2018 Jan. | 114.9 | 9.1 | 84.5 | 1.4 | 4.7 | 5.2 | 16.8 | 90.2 | 59.6 | 61.1 | 58.0 | 58.8 |
| Feb. | 114.2 | 8.0 | - | 0.1 | 4.3 | 4.5 | 17.6 | - | 58.6 | 59.6 | 56.2 | 57.1 |
| Mar. | 112.6 | 6.4 | - | 0.1 | 5.2 | 1.6 | 16.3 | - | 56.6 | 55.9 | 54.9 | 55.2 |
| Apr. | . | . | - | 0.4 | . | . | . | - | 56.0 | 55.8 | 55.0 | 55.2 |

Sources: European Commission (Directorate-General for Economic and Financial Affairs) (col. 1-8) and Markit (col. 9-12).

## 3.7 Summary accounts for households and non-financial corporations
(current prices, unless otherwise indicated; not seasonally adjusted)

| | Households | | | | | | | Non-financial corporations | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Saving ratio (gross) [1] | Debt ratio | Real gross disposable income | Financial investment | Non-financial investment (gross) | Net worth [2] | Housing wealth | Profit share [3] | Saving ratio (net) | Debt ratio [4] | Financial investment | Non-financial investment (gross) | Financing |
| | Percentage of gross disposable income (adjusted) | | Annual percentage changes | | | | | Percentage of net value added | | Percentage of GDP | Annual percentage changes | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 2014 | 12.7 | 94.3 | 1.0 | 1.9 | 1.3 | 2.7 | 0.9 | 32.4 | 4.9 | 131.8 | 2.7 | 7.2 | 1.6 |
| 2015 | 12.4 | 93.6 | 1.5 | 1.9 | 1.4 | 3.3 | 2.5 | 33.2 | 6.4 | 133.9 | 4.2 | 4.8 | 2.2 |
| 2016 | 12.1 | 93.3 | 1.8 | 1.9 | 5.6 | 4.3 | 4.5 | 33.1 | 7.8 | 135.2 | 4.0 | 6.1 | 2.1 |
| 2017 Q1 | 12.1 | 93.0 | 1.5 | 1.9 | 9.7 | 4.8 | 4.6 | 33.1 | 7.2 | 135.4 | 4.6 | 9.9 | 2.5 |
| Q2 | 12.1 | 93.1 | 1.2 | 2.0 | 5.2 | 5.0 | 4.7 | 32.9 | 6.5 | 134.2 | 4.2 | 10.2 | 2.5 |
| Q3 | 12.0 | 93.0 | 1.5 | 2.1 | 6.7 | 5.0 | 5.2 | 33.2 | 6.6 | 133.0 | 4.4 | 4.1 | 2.6 |
| Q4 | . | . | 1.4 | 2.0 | 7.4 | 5.1 | 6.0 | 33.5 | 6.9 | . | 3.6 | 2.7 | 2.0 |

Sources: ECB and Eurostat.
1) Based on four-quarter cumulated sums of both saving and gross disposable income (adjusted for the change in the net equity of households in pension fund reserves).
2) Financial assets (net of financial liabilities) and non-financial assets. Non-financial assets consist mainly of housing wealth (residential structures and land). They also include non-financial assets of unincorporated enterprises classified within the household sector.
3) The profit share uses net entrepreneurial income, which is broadly equivalent to current profits in business accounting.
4) Based on the outstanding amount of loans, debt securities, trade credits and pension scheme liabilities.

# 3 Economic activity

## 3.8 Euro area balance of payments, current and capital accounts

(EUR billions; seasonally adjusted unless otherwise indicated; transactions)

| | Current account | | | | | | | | | | | Capital account [1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | | | Goods | | Services | | Primary income | | Secondary income | | | |
| | Credit | Debit | Net | Credit | Debit | Credit | Debit | Credit | Debit | Credit | Debit | Credit | Debit |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 2017 Q1 | 958.1 | 870.5 | 87.6 | 560.5 | 484.9 | 206.7 | 188.7 | 164.4 | 138.2 | 26.5 | 58.6 | 7.4 | 17.6 |
| Q2 | 965.1 | 887.4 | 77.6 | 560.9 | 477.7 | 209.3 | 190.3 | 168.5 | 150.2 | 26.4 | 69.3 | 7.2 | 18.2 |
| Q3 | 988.8 | 873.1 | 115.7 | 575.5 | 482.8 | 214.5 | 186.3 | 171.8 | 138.5 | 26.9 | 65.4 | 7.1 | 8.4 |
| Q4 | 996.7 | 890.8 | 105.9 | 590.5 | 496.3 | 217.2 | 188.5 | 161.1 | 143.4 | 27.9 | 62.5 | 12.0 | 9.6 |
| 2017 Sep. | 330.9 | 291.7 | 39.2 | 194.8 | 161.5 | 71.7 | 62.1 | 55.5 | 46.0 | 9.0 | 22.2 | 2.2 | 3.1 |
| Oct. | 327.3 | 292.2 | 35.1 | 192.3 | 163.0 | 72.0 | 62.4 | 54.2 | 46.0 | 8.8 | 20.8 | 2.9 | 2.2 |
| Nov. | 331.8 | 295.2 | 36.5 | 197.0 | 165.7 | 71.8 | 63.2 | 53.8 | 45.5 | 9.1 | 20.9 | 2.8 | 2.3 |
| Dec. | 337.7 | 303.4 | 34.3 | 201.2 | 167.6 | 73.3 | 62.9 | 53.1 | 52.0 | 10.0 | 20.9 | 6.3 | 5.0 |
| 2018 Jan. | 329.6 | 290.5 | 39.0 | 196.5 | 167.5 | 71.3 | 62.7 | 53.0 | 42.1 | 8.7 | 18.2 | 2.9 | 1.8 |
| Feb. | 324.8 | 289.7 | 35.1 | 193.8 | 165.9 | 71.7 | 62.8 | 51.1 | 44.8 | 8.2 | 16.2 | 2.1 | 1.6 |
| *12-month cumulated transactions* | | | | | | | | | | | | | |
| 2018 Feb. | 3,926.8 | 3,518.8 | 408.1 | 2,306.1 | 1,950.7 | 853.6 | 751.8 | 659.6 | 565.0 | 107.4 | 251.3 | 33.4 | 45.8 |
| *12-month cumulated transactions as a percentage of GDP* | | | | | | | | | | | | | |
| 2018 Feb. | 35.1 | 31.5 | 3.7 | 20.6 | 17.5 | 7.6 | 6.7 | 5.9 | 5.1 | 1.0 | 2.2 | 0.3 | 0.4 |

1) The capital account is not seasonally adjusted.

## 3.9 Euro area external trade in goods [1] , values and volumes by product group [2]

(seasonally adjusted, unless otherwise indicated)

| | Total (n.s.a.) | | Exports (f.o.b.) | | | | | Imports (c.i.f.) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Total | | | | Memo item: | Total | | | | Memo items: | |
| | Exports | Imports | | Intermediate goods | Capital goods | Consumption goods | Manufacturing | | Intermediate goods | Capital goods | Consumption goods | Manufacturing | Oil |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| Values (EUR billions; annual percentage changes for columns 1 and 2) | | | | | | | | | | | | | |
| 2017 Q1 | 11.2 | 14.3 | 541.5 | 258.8 | 110.9 | 161.9 | 451.0 | 488.0 | 279.5 | 78.9 | 121.5 | 346.7 | 59.5 |
| Q2 | 5.4 | 10.1 | 545.5 | 257.2 | 112.7 | 163.0 | 456.3 | 488.4 | 275.9 | 81.1 | 123.9 | 355.0 | 52.2 |
| Q3 | 6.0 | 7.9 | 547.1 | 257.0 | 114.3 | 164.1 | 459.7 | 485.5 | 272.8 | 80.7 | 122.7 | 354.8 | 48.4 |
| Q4 | 6.1 | 7.5 | 562.0 | 268.2 | 115.5 | 167.1 | 471.2 | 499.5 | 285.2 | 80.8 | 124.8 | 359.5 | 58.9 |
| 2017 Sep. | 5.2 | 5.5 | 184.9 | 87.0 | 39.2 | 54.9 | 155.5 | 161.3 | 90.9 | 26.9 | 40.8 | 117.2 | 16.5 |
| Oct. | 9.0 | 10.7 | 181.4 | 86.7 | 36.7 | 54.0 | 151.8 | 163.0 | 92.5 | 27.1 | 41.3 | 119.1 | 17.7 |
| Nov. | 8.5 | 9.1 | 188.8 | 90.4 | 38.5 | 56.1 | 157.8 | 167.8 | 95.3 | 27.2 | 42.4 | 120.0 | 19.7 |
| Dec. | 0.8 | 2.6 | 191.8 | 91.1 | 40.3 | 57.0 | 161.6 | 168.6 | 97.4 | 26.4 | 41.2 | 120.4 | 21.5 |
| 2018 Jan. | 9.0 | 5.8 | 190.5 | 92.7 | 38.3 | 56.7 | 158.9 | 170.3 | 98.2 | 27.6 | 41.6 | 120.1 | 23.1 |
| Feb. | 3.0 | 1.6 | 186.1 | . | . | . | 155.2 | 165.1 | . | . | . | 115.8 | . |
| Volume indices (2000 = 100; annual percentage changes for columns 1 and 2) | | | | | | | | | | | | | |
| 2017 Q1 | 6.7 | 3.6 | 121.2 | 121.0 | 119.7 | 125.1 | 120.7 | 110.6 | 111.3 | 108.9 | 110.8 | 112.9 | 108.8 |
| Q2 | 1.6 | 2.5 | 122.4 | 121.0 | 121.7 | 125.6 | 122.1 | 112.9 | 112.8 | 113.1 | 114.2 | 116.3 | 104.5 |
| Q3 | 3.8 | 3.3 | 123.9 | 121.8 | 124.5 | 128.0 | 124.0 | 114.3 | 113.9 | 115.0 | 113.8 | 117.7 | 100.3 |
| Q4 | 4.5 | 3.9 | 126.5 | 125.8 | 125.2 | 130.4 | 126.8 | 114.5 | 114.8 | 112.6 | 115.1 | 118.1 | 106.6 |
| 2017 Aug. | 5.1 | 5.3 | 124.8 | 122.2 | 125.6 | 129.9 | 125.1 | 115.5 | 115.3 | 118.4 | 114.2 | 119.8 | 100.6 |
| Sep. | 3.1 | 1.2 | 125.9 | 124.0 | 128.4 | 128.5 | 126.2 | 113.8 | 113.2 | 115.4 | 114.1 | 117.2 | 98.3 |
| Oct. | 6.9 | 7.5 | 123.0 | 122.7 | 121.1 | 126.1 | 123.0 | 114.6 | 114.8 | 116.4 | 115.0 | 119.0 | 102.7 |
| Nov. | 6.7 | 4.1 | 127.6 | 126.9 | 124.9 | 132.4 | 127.5 | 115.2 | 114.6 | 114.5 | 116.8 | 118.1 | 105.4 |
| Dec. | -0.2 | -0.2 | 128.9 | 127.8 | 129.6 | 132.8 | 130.0 | 113.8 | 115.1 | 107.0 | 113.7 | 117.1 | 111.9 |
| 2018 Jan. | 8.7 | 4.9 | 128.0 | 128.9 | 123.5 | 133.0 | 127.9 | 114.5 | 114.9 | 112.9 | 114.5 | 116.9 | 114.6 |

Sources: ECB and Eurostat.

1) Differences between ECB's b.o.p. goods (Table 3.8) and Eurostat's trade in goods (Table 3.9) are mainly due to different definitions.

2) Product groups as classified in the Broad Economic Categories.

# 4 Prices and costs

## 4.1 Harmonised Index of Consumer Prices [1)]

(annual percentage changes, unless otherwise indicated)

| | Total | | | | | Total (s.a.; percentage change vis-à-vis previous period) [2)] | | | | | | Memo item: Administered prices | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Index: 2015 = 100 | Total | | Goods | Services | Total | Processed food | Unprocessed food | Non-energy industrial goods | Energy (n.s.a.) | Services | Total HICP excluding administered prices | Administered prices |
| | | | Total excluding food and energy | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| % of total in 2018 | 100.0 | 100.0 | 70.7 | 55.6 | 44.4 | 100.0 | 12.1 | 7.5 | 26.3 | 9.7 | 44.4 | 86.6 | 13.4 |
| 2015 | 100.0 | 0.0 | 0.8 | -0.8 | 1.2 | - | - | - | - | - | - | -0.1 | 1.0 |
| 2016 | 100.2 | 0.2 | 0.9 | -0.4 | 1.1 | - | - | - | - | - | - | 0.2 | 0.3 |
| 2017 | 101.8 | 1.5 | 1.0 | 1.7 | 1.4 | - | - | - | - | - | - | 1.6 | 1.0 |
| 2017 Q2 | 102.0 | 1.5 | 1.1 | 1.5 | 1.6 | 0.1 | 0.6 | -1.2 | 0.1 | -1.4 | 0.5 | 1.6 | 1.3 |
| Q3 | 101.8 | 1.4 | 1.2 | 1.4 | 1.5 | 0.2 | 0.7 | 0.4 | 0.1 | -0.9 | 0.3 | 1.5 | 1.1 |
| Q4 | 102.4 | 1.4 | 0.9 | 1.6 | 1.2 | 0.4 | 0.5 | 1.1 | 0.1 | 2.6 | 0.1 | 1.5 | 1.2 |
| 2018 Q1 | 102.3 | 1.3 | 1.0 | 1.2 | 1.3 | 0.5 | 0.7 | 0.1 | 0.1 | 1.9 | 0.4 | 1.2 | 1.9 |
| 2017 Oct. | 102.2 | 1.4 | 0.9 | 1.5 | 1.2 | 0.1 | 0.1 | 0.8 | 0.0 | 0.7 | -0.1 | 1.4 | 1.1 |
| Nov. | 102.3 | 1.5 | 0.9 | 1.8 | 1.2 | 0.2 | 0.2 | 0.0 | 0.1 | 1.5 | 0.1 | 1.6 | 1.2 |
| Dec. | 102.7 | 1.4 | 0.9 | 1.5 | 1.2 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 1.4 | 1.2 |
| 2018 Jan. | 101.8 | 1.3 | 1.0 | 1.4 | 1.2 | 0.3 | 0.3 | 0.0 | 0.1 | 1.8 | 0.1 | 1.2 | 1.9 |
| Feb. | 102.0 | 1.1 | 1.0 | 1.0 | 1.3 | 0.0 | -0.1 | -0.2 | 0.0 | -0.3 | 0.1 | 1.0 | 1.8 |
| Mar. | 103.0 | 1.3 | 1.0 | 1.2 | 1.5 | 0.1 | 0.7 | 0.1 | -0.1 | -0.8 | 0.3 | 1.2 | 2.0 |

| | Goods | | | | | | Services | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Food (including alcoholic beverages and tobacco) | | | Industrial goods | | | Housing | | Transport | Communication | Recreation and personal care | Miscellaneous |
| | Total | Processed food | Unprocessed food | Total | Non-energy industrial goods | Energy | | Rents | | | | |
| | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| % of total in 2018 | 19.6 | 12.1 | 7.5 | 36.0 | 26.3 | 9.7 | 10.6 | 6.4 | 7.3 | 3.2 | 15.3 | 8.1 |
| 2015 | 1.0 | 0.6 | 1.6 | -1.8 | 0.3 | -6.8 | 1.2 | 1.1 | 1.3 | -0.8 | 1.5 | 1.2 |
| 2016 | 0.9 | 0.6 | 1.4 | -1.1 | 0.4 | -5.1 | 1.1 | 1.1 | 0.8 | 0.0 | 1.4 | 1.2 |
| 2017 | 1.8 | 1.6 | 2.2 | 1.6 | 0.4 | 4.9 | 1.3 | 1.2 | 2.1 | -1.5 | 2.1 | 0.7 |
| 2017 Q2 | 1.5 | 1.4 | 1.6 | 1.5 | 0.3 | 4.6 | 1.3 | 1.3 | 2.6 | -1.4 | 2.3 | 0.8 |
| Q3 | 1.6 | 2.0 | 0.9 | 1.3 | 0.5 | 3.4 | 1.3 | 1.2 | 2.3 | -1.8 | 2.4 | 0.8 |
| Q4 | 2.2 | 2.1 | 2.3 | 1.3 | 0.4 | 3.5 | 1.2 | 1.2 | 1.7 | -1.7 | 2.0 | 0.4 |
| 2018 Q1 | 1.7 | 2.6 | 0.3 | 0.9 | 0.5 | 2.1 | 1.3 | 1.3 | 1.7 | -1.0 | 1.8 | 1.2 |
| 2017 Oct. | 2.3 | 2.1 | 2.8 | 1.1 | 0.4 | 3.0 | 1.3 | 1.2 | 1.5 | -1.8 | 2.1 | 0.4 |
| Nov. | 2.2 | 2.1 | 2.4 | 1.6 | 0.4 | 4.7 | 1.3 | 1.2 | 1.7 | -1.6 | 2.0 | 0.4 |
| Dec. | 2.1 | 2.2 | 1.9 | 1.2 | 0.5 | 2.9 | 1.2 | 1.2 | 1.9 | -1.7 | 1.9 | 0.4 |
| 2018 Jan. | 1.9 | 2.5 | 1.1 | 1.0 | 0.6 | 2.2 | 1.3 | 1.2 | 1.5 | -1.0 | 1.6 | 1.2 |
| Feb. | 1.0 | 2.3 | -0.9 | 1.0 | 0.6 | 2.1 | 1.3 | 1.3 | 1.7 | -1.2 | 1.7 | 1.1 |
| Mar. | 2.1 | 2.9 | 0.8 | 0.7 | 0.2 | 2.0 | 1.3 | 1.3 | 1.9 | -0.9 | 2.1 | 1.2 |

Sources: Eurostat and ECB calculations.

1) Data refer to the changing composition of the euro area.

2) In May 2016 the ECB started publishing enhanced seasonally adjusted HICP series for the euro area, following a review of the seasonal adjustment approach as described in Box 1, *Economic Bulletin*, Issue 3, ECB, 2016 (https://www.ecb.europa.eu/pub/pdf/ecbu/eb201603.en.pdf).

# 4 Prices and costs

## 4.2 Industry, construction and property prices

(annual percentage changes, unless otherwise indicated)

| | Industrial producer prices excluding construction [1] | | | | | | | | | | Con-struction | Residential property prices [2] | Experimental indicator of commercial property prices [2] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total (index: 2015 = 100) | Total | | Industry excluding construction and energy | | | | | | Energy | | | |
| | | | Manu-facturing | Total | Intermediate goods | Capital goods | Consumer goods | | | | | | |
| | | | | | | | Total | Food, beverages and tobacco | Non-food | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| % of total in 2015 | 100.0 | 100.0 | 77.3 | 72.1 | 28.9 | 20.7 | 22.5 | 16.5 | 5.9 | 27.9 | | | |
| 2015 | 100.0 | -2.6 | -2.3 | -0.5 | -1.2 | 0.7 | -0.6 | -0.9 | 0.2 | -8.7 | 0.4 | 1.6 | 2.3 |
| 2016 | 97.8 | -2.2 | -1.4 | -0.5 | -1.6 | 0.4 | 0.0 | 0.0 | 0.0 | -6.9 | 0.6 | 3.2 | 5.1 |
| 2017 | 100.8 | 3.1 | 3.0 | 2.1 | 3.2 | 0.8 | 1.9 | 2.7 | 0.2 | 5.9 | 2.1 | 4.1 | 4.3 |
| 2017 Q1 | 100.7 | 4.1 | 4.0 | 2.0 | 3.0 | 0.8 | 1.7 | 2.4 | 0.1 | 10.5 | 1.9 | 3.7 | 3.3 |
| Q2 | 100.3 | 3.3 | 3.0 | 2.4 | 3.5 | 0.8 | 2.3 | 3.4 | 0.2 | 6.1 | 2.0 | 3.9 | 4.5 |
| Q3 | 100.5 | 2.4 | 2.6 | 2.1 | 3.0 | 0.9 | 2.2 | 3.1 | 0.2 | 3.3 | 2.0 | 4.2 | 4.4 |
| Q4 | 101.7 | 2.5 | 2.5 | 2.0 | 3.2 | 0.9 | 1.5 | 2.0 | 0.3 | 3.8 | 2.4 | 4.6 | 5.1 |
| 2017 Sep. | 100.9 | 2.9 | 2.9 | 2.2 | 3.2 | 0.9 | 2.1 | 2.9 | 0.2 | 4.4 | - | - | - |
| Oct. | 101.3 | 2.5 | 2.5 | 2.2 | 3.5 | 0.9 | 1.8 | 2.4 | 0.2 | 3.1 | - | - | - |
| Nov. | 101.9 | 2.8 | 2.8 | 2.0 | 3.1 | 0.9 | 1.5 | 2.1 | 0.3 | 5.2 | - | - | - |
| Dec. | 102.0 | 2.2 | 2.1 | 1.9 | 2.9 | 0.9 | 1.3 | 1.7 | 0.4 | 3.0 | - | - | - |
| 2018 Jan. | 102.4 | 1.6 | 1.9 | 1.7 | 2.8 | 1.0 | 1.0 | 1.3 | 0.4 | 1.2 | - | - | - |
| Feb. | 102.5 | 1.6 | 1.4 | 1.6 | 2.4 | 1.0 | 0.9 | 1.0 | 0.5 | 2.0 | - | - | - |

Sources: Eurostat, ECB calculations, and ECB calculations based on MSCI data and national sources (col. 13).

1) Domestic sales only.

2) Experimental data based on non-harmonised sources (see https://www.ecb.europa.eu/stats/ecb_statistics/governance_and_quality_framework/html/experimental-data.en.html for further details).

## 4.3 Commodity prices and GDP deflators

(annual percentage changes, unless otherwise indicated)

| | GDP deflators | | | | | | | | Oil prices (EUR per barrel) | Non-energy commodity prices (EUR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total (s.a.; index: 2010 = 100) | Total | Domestic demand | | | | Exports [1] | Imports [1] | | Import-weighted [2] | | | Use-weighted [2] | | |
| | | | Total | Private consump-tion | Govern-ment consump-tion | Gross fixed capital formation | | | | Total | Food | Non-food | Total | Food | Non-food |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| % of total | | | | | | | | | | 100.0 | 45.4 | 54.6 | 100.0 | 50.4 | 49.6 |
| 2015 | 106.0 | 1.4 | 0.4 | 0.3 | 0.5 | 0.8 | 0.3 | -2.0 | 47.1 | 0.0 | 4.2 | -4.5 | 2.9 | 7.0 | -2.7 |
| 2016 | 106.8 | 0.8 | 0.4 | 0.4 | 0.6 | 0.8 | -1.5 | -2.5 | 39.9 | -3.5 | -3.9 | -3.2 | -7.3 | -10.3 | -2.9 |
| 2017 | 108.0 | 1.1 | 1.5 | 1.4 | 1.2 | 1.4 | 1.9 | 2.8 | 48.1 | 5.9 | -3.3 | 16.3 | 5.5 | -3.2 | 17.2 |
| 2017 Q2 | 107.9 | 1.2 | 1.5 | 1.4 | 1.2 | 1.4 | 2.3 | 3.2 | 45.6 | 6.8 | -2.7 | 18.2 | 6.7 | -2.4 | 19.9 |
| Q3 | 108.3 | 1.3 | 1.6 | 1.4 | 1.2 | 1.5 | 1.5 | 2.0 | 44.0 | 1.7 | -7.4 | 11.9 | 2.4 | -5.8 | 13.0 |
| Q4 | 108.5 | 1.2 | 1.4 | 1.3 | 1.3 | 1.5 | 1.2 | 1.7 | 52.2 | -2.4 | -8.9 | 4.4 | 0.1 | -4.8 | 5.9 |
| 2018 Q1 | . | . | . | . | . | . | . | . | 54.6 | -8.9 | -14.1 | -3.9 | -7.8 | -12.5 | -2.6 |
| 2017 Oct. | - | - | - | - | - | - | - | - | 49.0 | 2.5 | -6.1 | 12.0 | 5.2 | -1.2 | 13.2 |
| Nov. | - | - | - | - | - | - | - | - | 53.3 | -2.6 | -8.3 | 3.2 | 0.3 | -3.5 | 4.8 |
| Dec. | - | - | - | - | - | - | - | - | 54.2 | -6.7 | -12.3 | -1.2 | -4.8 | -9.3 | 0.4 |
| 2018 Jan. | - | - | - | - | - | - | - | - | 56.6 | -7.8 | -15.2 | -0.5 | -6.3 | -12.6 | 1.2 |
| Feb. | - | - | - | - | - | - | - | - | 53.0 | -9.4 | -14.3 | -4.9 | -8.0 | -12.2 | -3.3 |
| Mar. | - | - | - | - | - | - | - | - | 53.9 | -9.4 | -12.8 | -6.3 | -9.2 | -12.6 | -5.4 |

Sources: Eurostat, ECB calculations and Bloomberg (col. 9).

1) Deflators for exports and imports refer to goods and services and include cross-border trade within the euro area.

2) Import-weighted: weighted according to 2009-11 average import structure; use-weighted: weighted according to 2009-11 average domestic demand structure.

# 4 Prices and costs

## 4.4 Price-related opinion surveys
(seasonally adjusted)

| | European Commission Business and Consumer Surveys (percentage balances) | | | | | Purchasing Managers' Surveys (diffusion indices) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Selling price expectations (for next three months) | | | | Consumer price trends over past 12 months | Input prices | | Prices charged | |
| | Manu-facturing | Retail trade | Services | Construction | | Manu-facturing | Services | Manu-facturing | Services |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1999-14 | 4.4 | - | - | -3.0 | 33.5 | 57.2 | 56.5 | - | 49.8 |
| 2015 | -2.7 | 1.3 | 2.7 | -13.3 | -0.2 | 48.9 | 53.5 | 49.6 | 49.0 |
| 2016 | -0.3 | 1.7 | 4.4 | -7.2 | 0.2 | 49.8 | 53.9 | 49.3 | 49.6 |
| 2017 | 9.1 | 5.5 | 6.9 | 2.6 | 12.3 | 64.6 | 56.3 | 55.1 | 51.6 |
| 2017 Q2 | 7.9 | 4.2 | 5.9 | 2.0 | 12.3 | 62.5 | 55.9 | 54.6 | 51.5 |
| Q3 | 8.7 | 4.8 | 6.8 | 3.5 | 10.4 | 60.4 | 55.7 | 54.4 | 51.4 |
| Q4 | 10.9 | 7.6 | 8.4 | 8.3 | 13.8 | 67.9 | 56.9 | 56.3 | 52.1 |
| 2018 Q1 | 12.2 | 7.2 | 9.4 | 10.9 | 17.4 | 68.4 | 57.2 | 57.9 | 52.9 |
| 2017 Nov. | 11.1 | 7.5 | 8.2 | 8.2 | 14.7 | 69.4 | 56.9 | 56.8 | 52.1 |
| Dec. | 13.0 | 6.8 | 8.3 | 8.6 | 13.6 | 67.9 | 57.1 | 56.3 | 52.0 |
| 2018 Jan. | 12.5 | 7.5 | 9.8 | 10.8 | 17.3 | 70.7 | 58.4 | 58.1 | 53.6 |
| Feb. | 12.6 | 6.8 | 9.6 | 10.1 | 18.3 | 68.7 | 56.9 | 58.4 | 52.9 |
| Mar. | 11.5 | 7.3 | 8.8 | 11.7 | 16.5 | 65.8 | 56.3 | 57.3 | 52.1 |
| Apr. | . | . | . | . | . | 63.4 | 56.8 | 57.0 | 51.8 |

Sources: European Commission (Directorate-General for Economic and Financial Affairs) and Markit.

## 4.5 Labour cost indices
(annual percentage changes, unless otherwise indicated)

| | Total (index: 2012 = 100) | Total | By component | | For selected economic activities | | Memo item: Indicator of negotiated wages [1] |
|---|---|---|---|---|---|---|---|
| | | | Wages and salaries | Employers' social contributions | Business economy | Mainly non-business economy | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| % of total in 2012 | 100.0 | 100.0 | 74.6 | 25.4 | 69.3 | 30.7 | |
| 2015 | 104.3 | 1.6 | 1.9 | 0.7 | 1.6 | 1.6 | 1.5 |
| 2016 | 105.8 | 1.5 | 1.4 | 1.6 | 1.4 | 1.6 | 1.4 |
| 2017 | 107.5 | 1.6 | 1.8 | 1.3 | 1.7 | 1.4 | 1.5 |
| 2017 Q1 | 100.6 | 1.5 | 1.5 | 1.7 | 1.4 | 1.9 | 1.6 |
| Q2 | 111.2 | 1.8 | 2.2 | 0.8 | 1.9 | 1.7 | 1.5 |
| Q3 | 104.2 | 1.6 | 1.7 | 1.5 | 1.9 | 1.0 | 1.5 |
| Q4 | 114.0 | 1.5 | 1.8 | 1.1 | 1.8 | 1.1 | 1.6 |

Sources: Eurostat and ECB calculations.

1) Experimental data based on non-harmonised sources (see https://www.ecb.europa.eu/stats/ecb_statistics/governance_and_quality_framework/html/experimental-data.en.html for further details).

# 4 Prices and costs

## 4.6 Unit labour costs, compensation per labour input and labour productivity

(annual percentage changes, unless otherwise indicated; quarterly data seasonally adjusted; annual data unadjusted)

| | Total (index: 2010 =100) | Total | By economic activity | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Agriculture, forestry and fishing | Manu-facturing, energy and utilities | Con-struction | Trade, transport, accom-modation and food services | Information and commu-nication | Finance and insurance | Real estate | Professional, business and support services | Public ad-ministration, education, health and social work | Arts, enter-tainment and other services |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| **Unit labour costs** | | | | | | | | | | | | |
| 2015 | 104.8 | 0.4 | -3.4 | -1.8 | 0.5 | 1.0 | 0.9 | 0.7 | 2.1 | 1.5 | 1.3 | 1.4 |
| 2016 | 105.6 | 0.8 | 1.9 | 0.0 | -0.5 | 1.1 | 0.0 | 2.0 | 4.3 | 0.8 | 1.2 | 1.4 |
| 2017 | 106.5 | 0.8 | -0.1 | -0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 4.6 | 2.0 | 1.7 | 1.7 |
| 2017 Q1 | 106.2 | 0.9 | 0.3 | 0.3 | 0.0 | 0.3 | -1.0 | 1.8 | 3.0 | 1.8 | 1.7 | 1.7 |
| Q2 | 106.3 | 0.8 | 0.9 | -0.5 | -0.2 | -0.1 | 0.1 | 0.7 | 6.1 | 2.3 | 1.7 | 2.2 |
| Q3 | 106.4 | 0.6 | -0.4 | -1.2 | -0.1 | 0.4 | 1.1 | 0.1 | 4.4 | 1.9 | 1.4 | 1.5 |
| Q4 | 106.7 | 0.6 | -1.0 | -1.4 | 0.6 | 0.1 | 1.1 | -1.0 | 4.9 | 1.7 | 1.8 | 1.4 |
| **Compensation per employee** | | | | | | | | | | | | |
| 2015 | 108.1 | 1.4 | 0.8 | 1.9 | 0.9 | 1.5 | 2.8 | 0.7 | 1.4 | 1.6 | 1.2 | 1.9 |
| 2016 | 109.5 | 1.2 | 0.9 | 1.3 | 1.4 | 1.4 | 0.3 | 2.3 | 3.1 | 0.8 | 1.3 | 1.7 |
| 2017 | 111.2 | 1.6 | 0.9 | 1.5 | 1.5 | 1.6 | 1.7 | 1.5 | 3.7 | 2.2 | 1.7 | 1.5 |
| 2017 Q1 | 110.6 | 1.4 | 0.0 | 1.3 | 1.3 | 1.4 | 0.4 | 1.7 | 3.3 | 2.0 | 1.6 | 1.8 |
| Q2 | 111.0 | 1.6 | 0.9 | 1.4 | 1.9 | 1.3 | 1.7 | 1.6 | 4.7 | 2.1 | 1.8 | 1.7 |
| Q3 | 111.4 | 1.6 | 1.4 | 1.4 | 1.1 | 1.9 | 2.4 | 1.2 | 3.6 | 2.5 | 1.6 | 0.8 |
| Q4 | 112.2 | 1.8 | 1.6 | 1.9 | 2.0 | 1.6 | 2.2 | 1.3 | 3.5 | 2.2 | 1.8 | 1.6 |
| **Labour productivity per person employed** | | | | | | | | | | | | |
| 2015 | 103.2 | 1.1 | 4.4 | 3.7 | 0.4 | 0.5 | 1.9 | 0.0 | -0.7 | 0.1 | -0.1 | 0.5 |
| 2016 | 103.7 | 0.5 | -1.0 | 1.3 | 1.9 | 0.3 | 0.2 | 0.2 | -1.1 | 0.0 | 0.0 | 0.3 |
| 2017 | 104.4 | 0.7 | 1.0 | 1.9 | 1.1 | 1.2 | 1.2 | 1.0 | -0.8 | 0.2 | 0.0 | -0.3 |
| 2017 Q1 | 104.1 | 0.5 | -0.4 | 0.9 | 1.3 | 1.0 | 1.5 | -0.1 | 0.2 | 0.2 | -0.1 | 0.1 |
| Q2 | 104.4 | 0.8 | 0.0 | 1.9 | 2.0 | 1.4 | 1.6 | 0.9 | -1.4 | -0.2 | 0.1 | -0.5 |
| Q3 | 104.7 | 1.0 | 1.8 | 2.6 | 1.2 | 1.5 | 1.3 | 1.1 | -0.8 | 0.6 | 0.2 | -0.7 |
| Q4 | 105.1 | 1.2 | 2.6 | 3.3 | 1.3 | 1.5 | 1.1 | 2.3 | -1.3 | 0.4 | 0.1 | 0.3 |
| **Compensation per hour worked** | | | | | | | | | | | | |
| 2015 | 109.9 | 1.3 | 0.7 | 1.5 | 0.3 | 1.6 | 1.8 | 0.7 | 0.6 | 1.2 | 1.3 | 1.8 |
| 2016 | 111.4 | 1.3 | 0.4 | 1.3 | 1.4 | 1.4 | 0.8 | 1.7 | 3.3 | 0.6 | 1.5 | 1.6 |
| 2017 | 113.2 | 1.6 | 0.9 | 1.5 | 1.4 | 1.5 | 1.4 | 1.4 | 3.4 | 2.1 | 2.0 | 1.7 |
| 2017 Q1 | 112.4 | 1.6 | 0.5 | 1.4 | 0.9 | 1.4 | 0.3 | 1.4 | 3.2 | 1.8 | 2.1 | 2.6 |
| Q2 | 112.7 | 1.6 | 1.8 | 1.3 | 1.7 | 1.2 | 1.3 | 2.0 | 4.9 | 2.0 | 2.1 | 2.0 |
| Q3 | 113.1 | 1.4 | -0.1 | 1.1 | 0.6 | 1.4 | 1.8 | 0.7 | 3.3 | 2.2 | 1.8 | 1.0 |
| Q4 | 113.8 | 1.4 | 0.7 | 1.1 | 1.2 | 1.2 | 1.7 | 1.0 | 2.2 | 2.0 | 1.8 | 1.9 |
| **Hourly labour productivity** | | | | | | | | | | | | |
| 2015 | 105.2 | 1.0 | 3.4 | 3.3 | -0.2 | 0.9 | 0.9 | -0.1 | -1.0 | 0.0 | 0.0 | 0.2 |
| 2016 | 105.8 | 0.6 | -0.9 | 1.3 | 1.7 | 0.4 | 0.8 | -0.4 | -1.2 | -0.1 | 0.3 | 0.3 |
| 2017 | 106.8 | 0.9 | 2.0 | 1.9 | 1.2 | 1.2 | 1.2 | 1.0 | -0.9 | 0.3 | 0.3 | 0.2 |
| 2017 Q1 | 106.3 | 0.8 | 1.5 | 1.1 | 1.2 | 1.4 | 1.5 | -0.5 | 0.4 | 0.3 | 0.3 | 0.7 |
| Q2 | 106.5 | 0.9 | 1.3 | 1.8 | 2.0 | 1.2 | 1.3 | 1.3 | -1.2 | 0.0 | 0.3 | 0.0 |
| Q3 | 106.8 | 0.9 | 1.9 | 2.2 | 1.1 | 1.1 | 1.0 | 0.7 | -0.8 | 0.4 | 0.3 | -0.3 |
| Q4 | 107.3 | 1.0 | 2.4 | 2.7 | 0.6 | 1.4 | 0.9 | 2.2 | -2.3 | 0.4 | 0.1 | 0.9 |

Sources: Eurostat and ECB calculations.

# 5 Money and credit

## 5.1 Monetary aggregates [1)]

(EUR billions and annual growth rates; seasonally adjusted; outstanding amounts and growth rates at end of period; transactions during period)

| | M3 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | M2 | | | | | | | M3-M2 | | | | |
| | M1 | | | M2-M1 | | | | | | | | |
| | Currency in circulation | Overnight deposits | | Deposits with an agreed maturity of up to 2 years | Deposits redeemable at notice of up to 3 months | | | Repos | Money market fund shares | Debt securities with a maturity of up to 2 years | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| **Outstanding amounts** | | | | | | | | | | | | |
| 2015 | 1,037.7 | 5,575.8 | 6,613.5 | 1,444.1 | 2,159.7 | 3,603.8 | 10,217.2 | 74.5 | 485.1 | 75.6 | 635.2 | 10,852.4 |
| 2016 | 1,075.1 | 6,083.9 | 7,159.0 | 1,329.6 | 2,221.2 | 3,550.8 | 10,709.8 | 70.4 | 523.2 | 95.7 | 689.2 | 11,399.0 |
| 2017 | 1,112.0 | 6,634.9 | 7,746.9 | 1,194.7 | 2,261.2 | 3,455.9 | 11,202.8 | 75.8 | 509.4 | 75.8 | 661.0 | 11,863.8 |
| 2017 Q1 | 1,087.2 | 6,247.9 | 7,335.1 | 1,306.3 | 2,225.7 | 3,532.0 | 10,867.1 | 74.4 | 531.6 | 100.2 | 706.2 | 11,573.2 |
| Q2 | 1,094.9 | 6,383.4 | 7,478.3 | 1,259.8 | 2,237.4 | 3,497.2 | 10,975.5 | 68.2 | 513.7 | 80.1 | 662.1 | 11,637.6 |
| Q3 | 1,103.9 | 6,531.0 | 7,634.9 | 1,224.1 | 2,251.4 | 3,475.4 | 11,110.3 | 66.6 | 530.6 | 80.1 | 677.4 | 11,787.7 |
| Q4 | 1,112.0 | 6,634.9 | 7,746.9 | 1,194.7 | 2,261.2 | 3,455.9 | 11,202.8 | 75.8 | 509.4 | 75.8 | 661.0 | 11,863.8 |
| 2017 Sep. | 1,103.9 | 6,531.0 | 7,634.9 | 1,224.1 | 2,251.4 | 3,475.4 | 11,110.3 | 66.6 | 530.6 | 80.1 | 677.4 | 11,787.7 |
| Oct. | 1,110.0 | 6,547.7 | 7,657.7 | 1,218.2 | 2,258.6 | 3,476.8 | 11,134.6 | 68.9 | 528.1 | 68.4 | 665.4 | 11,800.0 |
| Nov. | 1,110.2 | 6,613.1 | 7,723.3 | 1,202.1 | 2,258.9 | 3,461.1 | 11,184.4 | 78.4 | 518.8 | 77.4 | 674.6 | 11,859.0 |
| Dec. | 1,112.0 | 6,634.9 | 7,746.9 | 1,194.7 | 2,261.2 | 3,455.9 | 11,202.8 | 75.8 | 509.4 | 75.8 | 661.0 | 11,863.8 |
| 2018 Jan. | 1,114.5 | 6,677.1 | 7,791.6 | 1,198.3 | 2,263.9 | 3,462.2 | 11,253.9 | 74.7 | 513.9 | 57.7 | 646.3 | 11,900.2 |
| Feb. [p] | 1,115.6 | 6,714.3 | 7,829.9 | 1,180.2 | 2,265.4 | 3,445.6 | 11,275.4 | 73.0 | 499.2 | 63.1 | 635.3 | 11,910.7 |
| **Transactions** | | | | | | | | | | | | |
| 2015 | 66.5 | 566.9 | 633.3 | -134.5 | 12.3 | -122.2 | 511.2 | -47.4 | 49.7 | -27.2 | -25.0 | 486.1 |
| 2016 | 37.5 | 541.7 | 579.2 | -105.6 | 16.0 | -89.5 | 489.7 | -4.2 | 38.0 | 16.1 | 49.8 | 539.5 |
| 2017 | 37.1 | 586.5 | 623.5 | -111.5 | 36.3 | -75.2 | 548.3 | 6.8 | -13.7 | -22.8 | -29.6 | 518.7 |
| 2017 Q1 | 12.1 | 166.8 | 178.9 | -21.0 | 4.4 | -16.6 | 162.3 | 4.1 | 8.5 | 4.0 | 16.5 | 178.8 |
| Q2 | 7.8 | 154.9 | 162.7 | -36.7 | 11.3 | -25.4 | 137.3 | -5.6 | -17.5 | -20.8 | -44.0 | 93.3 |
| Q3 | 9.1 | 157.5 | 166.6 | -32.6 | 10.8 | -21.8 | 144.8 | -1.1 | 16.8 | 2.7 | 18.4 | 163.3 |
| Q4 | 8.2 | 107.2 | 115.4 | -21.3 | 9.8 | -11.4 | 103.9 | 9.5 | -21.4 | -8.6 | -20.6 | 83.3 |
| 2017 Sep. | 4.4 | 45.0 | 49.3 | -16.4 | 3.4 | -13.1 | 36.3 | -3.9 | 9.7 | 5.5 | 11.3 | 47.6 |
| Oct. | 6.2 | 13.6 | 19.8 | -6.9 | 7.2 | 0.3 | 20.1 | 2.2 | -2.6 | -11.8 | -12.2 | 7.8 |
| Nov. | 0.1 | 69.3 | 69.4 | -8.0 | 0.4 | -7.6 | 61.9 | 9.8 | -9.4 | 5.0 | 5.5 | 67.3 |
| Dec. | 1.9 | 24.3 | 26.1 | -6.4 | 2.3 | -4.1 | 22.0 | -2.5 | -9.5 | -1.8 | -13.8 | 8.2 |
| 2018 Jan. | 2.4 | 48.9 | 51.3 | 6.3 | 4.3 | 10.6 | 61.9 | -0.7 | 4.5 | -16.9 | -13.2 | 48.8 |
| Feb. [p] | 1.1 | 33.0 | 34.1 | -19.7 | 1.4 | -18.3 | 15.8 | -2.0 | -14.6 | 4.6 | -12.1 | 3.7 |
| **Growth rates** | | | | | | | | | | | | |
| 2015 | 6.8 | 11.3 | 10.6 | -8.5 | 0.6 | -3.3 | 5.3 | -38.9 | 11.4 | -25.4 | -3.8 | 4.7 |
| 2016 | 3.6 | 9.7 | 8.8 | -7.3 | 0.7 | -2.5 | 4.8 | -5.7 | 7.8 | 21.0 | 7.8 | 5.0 |
| 2017 | 3.4 | 9.7 | 8.7 | -8.4 | 1.6 | -2.1 | 5.1 | 9.8 | -2.6 | -24.0 | -4.3 | 4.6 |
| 2017 Q1 | 3.7 | 9.9 | 9.0 | -7.6 | 0.7 | -2.5 | 5.0 | -14.5 | 12.9 | 3.9 | 7.9 | 5.1 |
| Q2 | 3.8 | 10.6 | 9.6 | -9.3 | 1.0 | -3.0 | 5.2 | -18.6 | 5.0 | -16.4 | -1.0 | 4.9 |
| Q3 | 3.5 | 11.0 | 9.8 | -10.4 | 1.4 | -3.2 | 5.4 | -13.2 | 5.6 | -12.0 | 1.1 | 5.2 |
| Q4 | 3.4 | 9.7 | 8.7 | -8.4 | 1.6 | -2.1 | 5.1 | 9.8 | -2.6 | -24.0 | -4.3 | 4.6 |
| 2017 Sep. | 3.5 | 11.0 | 9.8 | -10.4 | 1.4 | -3.2 | 5.4 | -13.2 | 5.6 | -12.0 | 1.1 | 5.2 |
| Oct. | 3.5 | 10.5 | 9.5 | -9.7 | 1.7 | -2.7 | 5.4 | -6.1 | 3.5 | -24.4 | -1.2 | 5.0 |
| Nov. | 3.3 | 10.2 | 9.2 | -9.3 | 1.7 | -2.5 | 5.3 | 10.0 | 1.4 | -23.2 | -1.2 | 4.9 |
| Dec. | 3.4 | 9.7 | 8.7 | -8.4 | 1.6 | -2.1 | 5.1 | 9.8 | -2.6 | -24.0 | -4.3 | 4.6 |
| 2018 Jan. | 3.1 | 9.8 | 8.8 | -8.1 | 1.7 | -1.9 | 5.2 | -1.6 | -1.1 | -38.7 | -6.3 | 4.5 |
| Feb. [p] | 2.9 | 9.4 | 8.4 | -9.1 | 1.8 | -2.3 | 4.9 | 7.9 | -2.9 | -35.3 | -6.4 | 4.2 |

Source: ECB.

1) Data refer to the changing composition of the euro area.

# 5 Money and credit

## 5.2 Deposits in M3 [1]

(EUR billions and annual growth rates; seasonally adjusted; outstanding amounts and growth rates at end of period; transactions during period)

| | Non-financial corporations [2] | | | | | Households [3] | | | | | Financial corporations other than MFIs and ICPFs [2] | Insurance corporations and pension funds | Other general government [4] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Overnight | With an agreed maturity of up to 2 years | Redeemable at notice of up to 3 months | Repos | Total | Overnight | With an agreed maturity of up to 2 years | Redeemable at notice of up to 3 months | Repos | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| **Outstanding amounts** | | | | | | | | | | | | | |
| 2015 | 1,953.2 | 1,503.9 | 323.6 | 117.4 | 8.3 | 5,750.7 | 3,060.7 | 695.0 | 1,992.3 | 2.7 | 957.9 | 226.6 | 365.5 |
| 2016 | 2,082.3 | 1,617.4 | 296.2 | 160.3 | 8.4 | 6,052.3 | 3,400.9 | 644.8 | 2,004.7 | 1.9 | 989.1 | 198.2 | 383.2 |
| 2017 | 2,243.2 | 1,786.8 | 287.1 | 159.8 | 9.5 | 6,302.0 | 3,697.5 | 561.8 | 2,042.0 | 0.6 | 1,011.1 | 200.4 | 409.9 |
| 2017 Q1 | 2,160.5 | 1,694.9 | 301.4 | 157.6 | 6.5 | 6,137.2 | 3,497.7 | 622.0 | 2,014.8 | 2.6 | 972.9 | 191.5 | 392.2 |
| Q2 | 2,190.0 | 1,732.0 | 293.6 | 158.0 | 6.4 | 6,188.9 | 3,560.3 | 600.8 | 2,025.5 | 2.3 | 970.3 | 196.5 | 403.1 |
| Q3 | 2,219.9 | 1,770.4 | 286.0 | 158.3 | 5.3 | 6,255.9 | 3,633.7 | 583.6 | 2,036.6 | 2.0 | 977.1 | 201.0 | 419.2 |
| Q4 | 2,243.2 | 1,786.8 | 287.1 | 159.8 | 9.5 | 6,302.0 | 3,697.5 | 561.8 | 2,042.0 | 0.6 | 1,011.1 | 200.4 | 409.9 |
| 2017 Sep. | 2,219.9 | 1,770.4 | 286.0 | 158.3 | 5.3 | 6,255.9 | 3,633.7 | 583.6 | 2,036.6 | 2.0 | 977.1 | 201.0 | 419.2 |
| Oct. | 2,231.5 | 1,786.0 | 280.6 | 159.3 | 5.5 | 6,294.0 | 3,673.5 | 576.1 | 2,042.2 | 2.2 | 946.0 | 202.7 | 419.3 |
| Nov. | 2,247.7 | 1,797.9 | 282.2 | 159.6 | 7.9 | 6,295.4 | 3,682.1 | 568.8 | 2,042.5 | 2.0 | 989.3 | 208.1 | 412.1 |
| Dec. | 2,243.2 | 1,786.8 | 287.1 | 159.8 | 9.5 | 6,302.0 | 3,697.5 | 561.8 | 2,042.0 | 0.6 | 1,011.1 | 200.4 | 409.9 |
| 2018 Jan. | 2,287.2 | 1,823.4 | 294.7 | 158.6 | 10.5 | 6,329.8 | 3,724.4 | 556.4 | 2,047.4 | 1.7 | 982.3 | 202.1 | 412.6 |
| Feb. (p) | 2,267.1 | 1,812.5 | 287.5 | 158.1 | 8.9 | 6,359.7 | 3,759.9 | 549.1 | 2,048.9 | 1.8 | 982.6 | 207.8 | 415.7 |
| **Transactions** | | | | | | | | | | | | | |
| 2015 | 85.1 | 124.3 | -32.9 | 4.9 | -11.2 | 194.7 | 303.8 | -109.8 | 1.2 | -0.4 | 88.3 | -0.5 | 29.6 |
| 2016 | 128.0 | 151.8 | -24.2 | 0.2 | 0.2 | 299.8 | 333.3 | -46.3 | 13.7 | -0.8 | 30.9 | -29.6 | 18.8 |
| 2017 | 178.8 | 180.3 | -2.6 | -0.1 | 1.1 | 254.5 | 303.9 | -81.6 | 33.4 | -1.3 | 53.8 | 4.1 | 27.0 |
| 2017 Q1 | 81.1 | 79.0 | 6.6 | -2.6 | -1.9 | 85.1 | 97.3 | -23.0 | 10.0 | 0.7 | -14.6 | -6.4 | 9.0 |
| Q2 | 39.1 | 43.1 | -4.8 | 0.7 | 0.0 | 54.9 | 65.8 | -20.4 | 9.9 | -0.3 | 14.0 | 5.3 | 10.7 |
| Q3 | 35.2 | 41.8 | -5.8 | 0.3 | -1.1 | 66.5 | 75.5 | -16.7 | 8.0 | -0.3 | 12.1 | 4.8 | 16.2 |
| Q4 | 23.4 | 16.3 | 1.4 | 1.5 | 4.2 | 48.0 | 65.3 | -21.5 | 5.5 | -1.3 | 42.3 | 0.4 | -8.9 |
| 2017 Sep. | 12.2 | 13.2 | -0.7 | 0.1 | -0.5 | 23.8 | 27.9 | -6.3 | 2.2 | -0.1 | -11.7 | 1.7 | 2.1 |
| Oct. | 9.7 | 14.3 | -5.9 | 1.0 | 0.3 | 37.6 | 39.4 | -7.6 | 5.6 | 0.2 | -32.8 | 1.7 | 0.0 |
| Nov. | 17.9 | 13.1 | 2.1 | 0.3 | 2.4 | 2.3 | 9.3 | -7.1 | 0.3 | -0.2 | 52.2 | 5.6 | -6.5 |
| Dec. | -4.2 | -11.1 | 5.2 | 0.1 | 1.5 | 8.1 | 16.7 | -6.8 | -0.4 | -1.4 | 22.9 | -6.8 | -2.3 |
| 2018 Jan. | 48.4 | 39.7 | 8.9 | -1.2 | 1.1 | 30.8 | 27.9 | -5.0 | 6.9 | 1.0 | -24.9 | 1.7 | 2.8 |
| Feb. (p) | -22.3 | -12.4 | -7.8 | -0.5 | -1.7 | 28.8 | 34.8 | -7.6 | 1.5 | 0.1 | -2.3 | 5.5 | 3.0 |
| **Growth rates** | | | | | | | | | | | | | |
| 2015 | 4.6 | 9.0 | -9.2 | 4.4 | -57.6 | 3.5 | 11.0 | -13.6 | 0.1 | -13.2 | 10.2 | -0.2 | 8.8 |
| 2016 | 6.7 | 10.1 | -7.5 | 0.2 | 2.1 | 5.2 | 10.9 | -6.7 | 0.6 | -29.9 | 3.1 | -13.0 | 5.2 |
| 2017 | 8.6 | 11.2 | -0.9 | 0.0 | 13.8 | 4.2 | 8.9 | -12.7 | 1.7 | -65.9 | 5.6 | 2.1 | 7.0 |
| 2017 Q1 | 7.8 | 11.5 | -5.4 | -1.4 | -32.6 | 5.3 | 11.4 | -10.0 | 1.0 | 1.6 | 1.4 | -13.0 | 4.1 |
| Q2 | 8.1 | 11.5 | -4.3 | -1.6 | -21.4 | 4.8 | 10.6 | -12.3 | 1.3 | -25.3 | 3.2 | -6.2 | 6.1 |
| Q3 | 8.1 | 12.2 | -7.3 | -1.8 | -42.3 | 4.6 | 9.9 | -12.5 | 1.6 | -25.3 | 5.7 | -2.0 | 9.0 |
| Q4 | 8.6 | 11.2 | -0.9 | 0.0 | 13.8 | 4.2 | 8.9 | -12.7 | 1.7 | -65.9 | 5.6 | 2.1 | 7.0 |
| 2017 Sep. | 8.1 | 12.2 | -7.3 | -1.8 | -42.3 | 4.6 | 9.9 | -12.5 | 1.6 | -25.3 | 5.7 | -2.0 | 9.0 |
| Oct. | 8.4 | 12.2 | -7.0 | -1.1 | -20.0 | 4.8 | 10.1 | -12.7 | 1.8 | -21.3 | 4.2 | -1.5 | 7.3 |
| Nov. | 8.5 | 11.9 | -5.7 | -0.1 | -4.9 | 4.4 | 9.4 | -12.7 | 1.7 | -17.5 | 6.2 | 1.1 | 7.6 |
| Dec. | 8.6 | 11.2 | -0.9 | 0.0 | 13.8 | 4.2 | 8.9 | -12.7 | 1.7 | -65.9 | 5.6 | 2.1 | 7.0 |
| 2018 Jan. | 8.7 | 10.8 | 0.4 | 0.2 | 48.5 | 4.1 | 8.6 | -12.5 | 1.7 | -37.1 | 6.9 | 4.1 | 5.4 |
| Feb. (p) | 6.8 | 9.0 | -2.6 | 0.3 | 31.1 | 4.2 | 8.7 | -12.5 | 1.7 | -33.3 | 7.0 | 6.0 | 6.2 |

Source: ECB.

1) Data refer to the changing composition of the euro area.

2) In accordance with the ESA 2010, in December 2014 holding companies of non-financial groups were reclassified from the non-financial corporations sector to the financial corporations sector. These entities are included in MFI balance sheet statistics with financial corporations other than MFIs and insurance corporations and pension funds (ICPFs).

3) Including non-profit institutions serving households.

4) Refers to the general government sector excluding central government.

# 5 Money and credit

## 5.3 Credit to euro area residents [1)]

(EUR billions and annual growth rates; seasonally adjusted; outstanding amounts and growth rates at end of period; transactions during period)

| | Credit to general government | | | Credit to other euro area residents | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Loans | Debt securities | Total | Loans | | | | | | Debt securities | Equity and non-money market fund investment fund shares |
| | | | | | Total | | To non-financial corporations [3)] | To households [4)] | To financial corporations other than MFIs and ICPFs [3)] | To insurance corporations and pension funds | | |
| | | | | | | Adjusted loans [2)] | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| **Outstanding amounts** | | | | | | | | | | | | |
| 2015 | 3,901.3 | 1,113.5 | 2,785.4 | 12,599.8 | 10,509.6 | 10,805.0 | 4,290.2 | 5,308.7 | 787.1 | 123.8 | 1,307.8 | 782.4 |
| 2016 | 4,393.6 | 1,083.3 | 3,297.1 | 12,877.7 | 10,708.3 | 10,979.2 | 4,313.5 | 5,447.3 | 834.7 | 112.7 | 1,385.4 | 784.0 |
| 2017 | 4,631.1 | 1,032.5 | 3,584.7 | 13,114.3 | 10,872.9 | 11,170.0 | 4,325.1 | 5,597.9 | 841.1 | 108.8 | 1,439.9 | 801.5 |
| 2017 Q1 | 4,434.5 | 1,071.6 | 3,348.8 | 13,006.3 | 10,790.4 | 11,047.5 | 4,332.7 | 5,494.6 | 850.2 | 112.9 | 1,423.2 | 792.6 |
| Q2 | 4,463.9 | 1,064.5 | 3,385.2 | 13,001.0 | 10,766.7 | 11,050.3 | 4,301.9 | 5,520.1 | 832.0 | 112.7 | 1,437.8 | 796.5 |
| Q3 | 4,548.3 | 1,050.5 | 3,483.7 | 13,049.0 | 10,816.1 | 11,103.7 | 4,304.9 | 5,554.6 | 844.8 | 111.9 | 1,438.8 | 794.1 |
| Q4 | 4,631.1 | 1,032.5 | 3,584.7 | 13,114.3 | 10,872.9 | 11,170.0 | 4,325.1 | 5,597.9 | 841.1 | 108.8 | 1,439.9 | 801.5 |
| 2017 Sep. | 4,548.3 | 1,050.5 | 3,483.7 | 13,049.0 | 10,816.1 | 11,103.7 | 4,304.9 | 5,554.6 | 844.8 | 111.9 | 1,438.8 | 794.1 |
| Oct. | 4,559.0 | 1,044.7 | 3,500.5 | 13,093.8 | 10,860.8 | 11,147.2 | 4,331.9 | 5,565.2 | 851.6 | 112.1 | 1,432.6 | 800.4 |
| Nov. | 4,581.9 | 1,041.6 | 3,526.4 | 13,121.5 | 10,888.7 | 11,170.0 | 4,344.5 | 5,581.1 | 848.1 | 115.0 | 1,426.9 | 805.8 |
| Dec. | 4,631.1 | 1,032.5 | 3,584.7 | 13,114.3 | 10,872.9 | 11,170.0 | 4,325.1 | 5,597.9 | 841.1 | 108.8 | 1,439.9 | 801.5 |
| 2018 Jan. | 4,597.4 | 1,031.2 | 3,552.0 | 13,182.3 | 10,932.0 | 11,228.9 | 4,353.1 | 5,603.8 | 862.6 | 112.5 | 1,449.3 | 801.0 |
| Feb. [p] | 4,596.0 | 1,023.2 | 3,558.6 | 13,180.8 | 10,937.4 | 11,222.3 | 4,347.3 | 5,617.8 | 858.5 | 113.8 | 1,457.4 | 786.0 |
| **Transactions** | | | | | | | | | | | | |
| 2015 | 295.3 | -21.0 | 316.0 | 82.9 | 55.9 | 76.0 | -15.0 | 98.5 | -22.0 | -5.7 | 25.6 | 1.5 |
| 2016 | 488.3 | -34.6 | 522.8 | 317.1 | 234.2 | 258.2 | 81.5 | 120.2 | 43.6 | -11.1 | 78.8 | 4.1 |
| 2017 | 290.1 | -43.4 | 332.9 | 360.7 | 271.7 | 315.4 | 80.0 | 173.3 | 22.0 | -3.6 | 64.0 | 25.0 |
| 2017 Q1 | 77.4 | -11.1 | 88.0 | 143.5 | 96.6 | 86.7 | 26.4 | 49.6 | 20.4 | 0.2 | 36.7 | 10.1 |
| Q2 | 34.6 | -5.2 | 39.8 | 55.6 | 24.3 | 49.2 | 0.1 | 34.8 | -10.6 | 0.0 | 19.4 | 12.0 |
| Q3 | 88.7 | -10.8 | 99.6 | 73.9 | 75.5 | 86.8 | 20.7 | 40.7 | 14.9 | -0.7 | 2.1 | -3.8 |
| Q4 | 89.4 | -16.3 | 105.5 | 87.8 | 75.3 | 92.8 | 32.8 | 48.3 | -2.7 | -3.0 | 5.8 | 6.7 |
| 2017 Sep. | 16.6 | -3.5 | 20.4 | 22.0 | 24.0 | 27.3 | 4.5 | 15.6 | 6.7 | -2.8 | -1.5 | -0.5 |
| Oct. | 4.2 | -5.7 | 9.9 | 38.3 | 44.4 | 44.8 | 27.6 | 11.2 | 5.3 | 0.2 | -8.8 | 2.7 |
| Nov. | 20.8 | -1.4 | 22.2 | 43.8 | 35.4 | 32.3 | 16.0 | 18.3 | -1.9 | 2.9 | 0.3 | 8.1 |
| Dec. | 64.4 | -9.1 | 73.4 | 5.7 | -4.5 | 15.7 | -10.9 | 18.7 | -6.1 | -6.2 | 14.2 | -4.1 |
| 2018 Jan. | -29.9 | -0.6 | -29.6 | 77.2 | 68.2 | 68.8 | 33.1 | 7.2 | 24.2 | 3.7 | 11.1 | -2.0 |
| Feb. [p] | -0.6 | -7.8 | 7.1 | -0.8 | 3.0 | -10.3 | -7.5 | 14.0 | -4.8 | 1.3 | 8.3 | -12.1 |
| **Growth rates** | | | | | | | | | | | | |
| 2015 | 8.2 | -1.8 | 12.8 | 0.7 | 0.5 | 0.7 | -0.3 | 1.9 | -2.7 | -4.4 | 2.0 | 0.2 |
| 2016 | 12.5 | -3.1 | 18.7 | 2.5 | 2.2 | 2.4 | 1.9 | 2.3 | 5.6 | -9.0 | 6.0 | 0.5 |
| 2017 | 6.7 | -4.0 | 10.2 | 2.8 | 2.5 | 2.9 | 1.9 | 3.2 | 2.7 | -3.2 | 4.6 | 3.2 |
| 2017 Q1 | 10.9 | -4.2 | 16.8 | 3.1 | 2.4 | 2.7 | 1.7 | 2.5 | 4.8 | 3.6 | 8.2 | 4.7 |
| Q2 | 8.2 | -3.8 | 12.6 | 3.1 | 2.3 | 2.5 | 1.2 | 2.9 | 3.7 | 8.4 | 7.2 | 6.4 |
| Q3 | 8.4 | -4.0 | 12.8 | 2.8 | 2.4 | 2.7 | 1.5 | 3.0 | 3.6 | 2.0 | 5.6 | 2.6 |
| Q4 | 6.7 | -4.0 | 10.2 | 2.8 | 2.5 | 2.9 | 1.9 | 3.2 | 2.7 | -3.2 | 4.6 | 3.2 |
| 2017 Sep. | 8.4 | -4.0 | 12.8 | 2.8 | 2.4 | 2.7 | 1.5 | 3.0 | 3.6 | 2.0 | 5.6 | 2.6 |
| Oct. | 7.4 | -4.2 | 11.5 | 2.7 | 2.5 | 2.8 | 1.7 | 3.1 | 3.6 | -1.6 | 4.4 | 2.8 |
| Nov. | 6.8 | -3.8 | 10.5 | 2.8 | 2.5 | 2.9 | 1.8 | 3.1 | 3.2 | 0.1 | 3.9 | 4.4 |
| Dec. | 6.7 | -4.0 | 10.2 | 2.8 | 2.5 | 2.9 | 1.9 | 3.2 | 2.7 | -3.2 | 4.6 | 3.2 |
| 2018 Jan. | 5.4 | -4.4 | 8.7 | 3.0 | 2.9 | 3.3 | 2.3 | 3.1 | 5.6 | -1.2 | 4.5 | 2.2 |
| Feb. [p] | 5.1 | -4.1 | 8.1 | 2.8 | 2.7 | 3.0 | 1.9 | 3.0 | 4.6 | 2.0 | 4.9 | 0.2 |

Source: ECB.

1) Data refer to the changing composition of the euro area.

2) 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.

3) In accordance with the ESA 2010, in December 2014 holding companies of non-financial groups were reclassified from the non-financial corporations sector to the financial corporations sector. These entities are included in MFI balance sheet statistics with financial corporations other than MFIs and insurance corporations and pension funds (ICPFs).

4) Including non-profit institutions serving households.

# 5 Money and credit

## 5.4 MFI loans to euro area non-financial corporations and households [1)]

(EUR billions and annual growth rates; seasonally adjusted; outstanding amounts and growth rates at end of period; transactions during period)

| | Non-financial corporations [2)] | | | | | Households [3)] | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Total | | Up to 1 year | Over 1 and up to 5 years | Over 5 years | Total | | Loans for consumption | Loans for house purchase | Other loans |
| | | Adjusted loans [4)] | | | | | Adjusted loans [4)] | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| **Outstanding amounts** | | | | | | | | | | |
| 2015 | 4,290.2 | 4,272.8 | 1,043.1 | 761.8 | 2,485.2 | 5,308.7 | 5,641.5 | 595.4 | 3,949.4 | 763.9 |
| 2016 | 4,313.5 | 4,313.1 | 1,002.2 | 797.7 | 2,513.6 | 5,447.3 | 5,727.2 | 615.6 | 4,083.3 | 748.4 |
| 2017 | 4,325.1 | 4,365.0 | 976.8 | 820.5 | 2,527.8 | 5,597.9 | 5,865.6 | 653.3 | 4,214.2 | 730.5 |
| 2017 Q1 | 4,332.7 | 4,333.8 | 1,006.0 | 802.5 | 2,524.2 | 5,494.6 | 5,768.9 | 626.9 | 4,123.3 | 744.5 |
| Q2 | 4,301.9 | 4,316.1 | 990.8 | 798.6 | 2,512.5 | 5,520.1 | 5,798.9 | 635.3 | 4,147.7 | 737.1 |
| Q3 | 4,304.9 | 4,326.1 | 978.2 | 812.4 | 2,514.3 | 5,554.6 | 5,828.8 | 644.7 | 4,179.0 | 730.9 |
| Q4 | 4,325.1 | 4,365.0 | 976.8 | 820.5 | 2,527.8 | 5,597.9 | 5,865.6 | 653.3 | 4,214.2 | 730.5 |
| 2017 Sep. | 4,304.9 | 4,326.1 | 978.2 | 812.4 | 2,514.3 | 5,554.6 | 5,828.8 | 644.7 | 4,179.0 | 730.9 |
| Oct. | 4,331.9 | 4,352.6 | 992.4 | 816.9 | 2,522.6 | 5,565.2 | 5,840.5 | 647.7 | 4,186.7 | 730.7 |
| Nov. | 4,344.5 | 4,365.7 | 987.9 | 822.7 | 2,533.9 | 5,581.1 | 5,853.2 | 652.2 | 4,197.5 | 731.5 |
| Dec. | 4,325.1 | 4,365.0 | 976.8 | 820.5 | 2,527.8 | 5,597.9 | 5,865.6 | 653.3 | 4,214.2 | 730.5 |
| 2018 Jan. | 4,353.1 | 4,387.6 | 996.1 | 826.5 | 2,530.6 | 5,603.8 | 5,879.8 | 659.2 | 4,215.6 | 729.0 |
| Feb. [p] | 4,347.3 | 4,377.6 | 989.8 | 821.5 | 2,536.0 | 5,617.8 | 5,893.7 | 661.9 | 4,223.4 | 732.4 |
| **Transactions** | | | | | | | | | | |
| 2015 | -15.0 | 22.8 | -62.1 | 31.9 | 15.2 | 98.5 | 76.9 | 21.8 | 80.2 | -3.5 |
| 2016 | 81.5 | 98.7 | -17.3 | 44.2 | 54.6 | 120.2 | 114.4 | 23.9 | 105.5 | -9.2 |
| 2017 | 80.0 | 131.3 | 0.7 | 36.3 | 43.1 | 173.3 | 166.1 | 43.4 | 134.0 | -4.1 |
| 2017 Q1 | 26.4 | 31.4 | 6.2 | 6.3 | 14.0 | 49.6 | 43.8 | 11.2 | 39.3 | -0.8 |
| Q2 | 0.1 | 10.8 | -1.8 | 2.3 | -0.4 | 34.8 | 40.3 | 10.3 | 25.0 | -0.6 |
| Q3 | 20.7 | 33.2 | -6.3 | 17.1 | 10.0 | 40.7 | 36.3 | 10.6 | 33.3 | -3.3 |
| Q4 | 32.8 | 55.9 | 2.6 | 10.6 | 19.5 | 48.3 | 45.8 | 11.3 | 36.4 | 0.6 |
| 2017 Sep. | 4.5 | 7.4 | -3.3 | 8.1 | -0.3 | 15.6 | 11.5 | 2.3 | 13.6 | -0.3 |
| Oct. | 27.6 | 28.4 | 14.0 | 4.7 | 8.9 | 11.2 | 12.6 | 3.4 | 7.6 | 0.2 |
| Nov. | 16.0 | 17.6 | -2.5 | 6.8 | 11.7 | 18.3 | 16.0 | 5.7 | 11.4 | 1.1 |
| Dec. | -10.9 | 9.9 | -8.9 | -0.9 | -1.0 | 18.7 | 17.2 | 2.1 | 17.4 | -0.7 |
| 2018 Jan. | 33.1 | 26.1 | 21.7 | 7.4 | 3.9 | 7.2 | 17.8 | 5.9 | 1.9 | -0.6 |
| Feb. [p] | -7.5 | -8.9 | -7.5 | -5.2 | 5.2 | 14.0 | 9.3 | 2.9 | 7.3 | 3.8 |
| **Growth rates** | | | | | | | | | | |
| 2015 | -0.3 | 0.5 | -5.6 | 4.4 | 0.6 | 1.9 | 1.4 | 3.9 | 2.1 | -0.5 |
| 2016 | 1.9 | 2.3 | -1.7 | 5.8 | 2.2 | 2.3 | 2.0 | 4.0 | 2.7 | -1.2 |
| 2017 | 1.9 | 3.1 | 0.1 | 4.6 | 1.7 | 3.2 | 2.9 | 7.1 | 3.3 | -0.5 |
| 2017 Q1 | 1.7 | 2.4 | -2.7 | 4.9 | 2.6 | 2.5 | 2.4 | 4.5 | 2.9 | -1.2 |
| Q2 | 1.2 | 2.0 | -2.5 | 3.8 | 2.0 | 2.9 | 2.6 | 6.0 | 3.2 | -1.1 |
| Q3 | 1.5 | 2.5 | -1.2 | 4.2 | 1.7 | 3.0 | 2.7 | 6.9 | 3.2 | -1.1 |
| Q4 | 1.9 | 3.1 | 0.1 | 4.6 | 1.7 | 3.2 | 2.9 | 7.1 | 3.3 | -0.5 |
| 2017 Sep. | 1.5 | 2.5 | -1.2 | 4.2 | 1.7 | 3.0 | 2.7 | 6.9 | 3.2 | -1.1 |
| Oct. | 1.7 | 2.9 | -0.7 | 4.6 | 1.9 | 3.1 | 2.7 | 6.8 | 3.3 | -0.9 |
| Nov. | 1.8 | 3.1 | -1.0 | 4.7 | 2.0 | 3.1 | 2.8 | 7.2 | 3.1 | -0.8 |
| Dec. | 1.9 | 3.1 | 0.1 | 4.6 | 1.7 | 3.2 | 2.9 | 7.1 | 3.3 | -0.5 |
| 2018 Jan. | 2.3 | 3.4 | 1.0 | 5.3 | 1.8 | 3.1 | 2.9 | 7.2 | 3.1 | -0.8 |
| Feb. [p] | 1.9 | 3.1 | 0.5 | 4.6 | 1.7 | 3.0 | 2.9 | 7.3 | 2.9 | -0.1 |

Source: ECB.

1) Data refer to the changing composition of the euro area.

2) In accordance with the ESA 2010, in December 2014 holding companies of non-financial groups were reclassified from the non-financial corporations sector to the financial corporations sector. These entities are included in MFI balance sheet statistics with financial corporations other than MFIs and insurance corporations and pension funds (ICPFs).

3) Including non-profit institutions serving households.

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.

# 5 Money and credit

## 5.5 Counterparts to M3 other than credit to euro area residents [1)]

(EUR billions and annual growth rates; seasonally adjusted; outstanding amounts and growth rates at end of period; transactions during period)

| | MFI liabilities | | | | | | MFI assets | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Central government holdings [2)] | Longer-term financial liabilities vis-à-vis other euro area residents | | | | | Net external assets | Other | | |
| | | Total | Deposits with an agreed maturity of over 2 years | Deposits redeemable at notice of over 3 months | Debt securities with a maturity of over 2 years | Capital and reserves | | Total | Repos with central counter-parties [3)] | Reverse repos to central counter-parties [3)] |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| **Outstanding amounts** | | | | | | | | | | |
| 2015 | 284.7 | 6,999.1 | 2,119.4 | 80.0 | 2,255.8 | 2,543.9 | 1,350.6 | 284.5 | 205.9 | 135.6 |
| 2016 | 314.2 | 6,956.8 | 2,090.9 | 70.9 | 2,146.7 | 2,648.4 | 1,136.9 | 261.8 | 205.9 | 121.6 |
| 2017 | 356.2 | 6,747.7 | 1,968.7 | 59.7 | 2,016.1 | 2,703.2 | 933.1 | 289.2 | 143.9 | 93.6 |
| 2017 Q1 | 308.2 | 6,918.0 | 2,068.1 | 69.3 | 2,106.5 | 2,674.2 | 1,103.9 | 254.7 | 183.1 | 111.8 |
| Q2 | 305.7 | 6,800.7 | 2,035.7 | 66.8 | 2,066.4 | 2,631.9 | 1,031.3 | 247.8 | 154.2 | 109.7 |
| Q3 | 365.3 | 6,731.3 | 2,007.3 | 61.5 | 2,016.2 | 2,646.3 | 1,023.9 | 263.1 | 140.6 | 85.4 |
| Q4 | 356.2 | 6,747.7 | 1,968.7 | 59.7 | 2,016.1 | 2,703.2 | 933.1 | 289.2 | 143.9 | 93.6 |
| 2017 Sep. | 365.3 | 6,731.3 | 2,007.3 | 61.5 | 2,016.2 | 2,646.3 | 1,023.9 | 263.1 | 140.6 | 85.4 |
| Oct. | 341.8 | 6,720.2 | 1,983.1 | 60.8 | 2,012.7 | 2,663.5 | 965.6 | 243.6 | 158.3 | 109.5 |
| Nov. | 308.9 | 6,696.7 | 1,964.8 | 60.1 | 2,016.2 | 2,655.5 | 951.8 | 209.4 | 167.6 | 132.7 |
| Dec. | 356.2 | 6,747.7 | 1,968.7 | 59.7 | 2,016.1 | 2,703.2 | 933.1 | 289.2 | 143.9 | 93.6 |
| 2018 Jan. | 316.2 | 6,734.0 | 1,959.4 | 60.5 | 2,022.5 | 2,691.7 | 817.9 | 352.8 | 133.2 | 85.8 |
| Feb. [(p)] | 346.4 | 6,715.2 | 1,955.3 | 59.8 | 2,016.0 | 2,684.0 | 842.2 | 353.2 | 124.9 | 83.0 |
| **Transactions** | | | | | | | | | | |
| 2015 | 8.9 | -216.1 | -106.3 | -13.5 | -215.4 | 119.0 | -86.0 | -13.3 | 21.4 | -4.0 |
| 2016 | 26.7 | -113.8 | -69.6 | -9.1 | -110.4 | 75.4 | -276.2 | -76.8 | 12.8 | -12.0 |
| 2017 | 45.6 | -79.6 | -84.8 | -8.7 | -71.8 | 85.6 | -103.1 | -63.0 | -60.8 | -27.3 |
| 2017 Q1 | -7.5 | -12.2 | -16.6 | -1.5 | -27.3 | 33.3 | -33.6 | -28.2 | -21.6 | -9.1 |
| Q2 | -2.6 | -10.9 | -24.8 | -2.4 | -3.2 | 19.6 | -13.7 | 3.3 | -28.9 | -2.1 |
| Q3 | 64.9 | -23.7 | -25.5 | -2.9 | -30.0 | 34.6 | 23.0 | 19.0 | -13.6 | -24.3 |
| Q4 | -9.2 | -32.9 | -17.8 | -1.8 | -11.3 | -2.0 | -78.8 | -57.0 | 3.3 | 8.2 |
| 2017 Sep. | 22.3 | -15.8 | -8.7 | -1.0 | -22.0 | 15.9 | 5.1 | 10.4 | 16.2 | 16.5 |
| Oct. | -23.3 | -28.3 | -25.0 | -0.7 | -9.5 | 6.9 | -66.5 | -19.8 | 17.7 | 24.1 |
| Nov. | -33.0 | -3.5 | 2.2 | -0.7 | -7.2 | 2.2 | 0.0 | -33.8 | 9.3 | 23.2 |
| Dec. | 47.2 | -1.1 | 5.0 | -0.5 | 5.5 | -11.0 | -12.4 | -3.4 | -23.7 | -39.1 |
| 2018 Jan. | -39.8 | 15.4 | -7.4 | -0.6 | 20.1 | 3.4 | -29.3 | 6.4 | -10.7 | -7.8 |
| Feb. [(p)] | 30.1 | -29.3 | -6.0 | -0.7 | -16.4 | -6.3 | 15.0 | -9.1 | -8.3 | -2.8 |
| **Growth rates** | | | | | | | | | | |
| 2015 | 3.5 | -3.0 | -4.8 | -14.4 | -8.8 | 4.8 | - | - | 11.6 | -2.9 |
| 2016 | 9.4 | -1.6 | -3.3 | -11.5 | -4.9 | 2.9 | - | - | 6.3 | -9.0 |
| 2017 | 14.4 | -1.2 | -4.1 | -12.4 | -3.4 | 3.3 | - | - | -29.6 | -22.6 |
| 2017 Q1 | -4.3 | -1.1 | -3.8 | -10.1 | -4.5 | 4.4 | - | - | -20.8 | -25.3 |
| Q2 | -7.7 | -1.1 | -4.0 | -10.9 | -3.7 | 3.6 | - | - | -30.7 | -22.6 |
| Q3 | 22.0 | -0.8 | -4.1 | -12.5 | -3.4 | 4.3 | - | - | -31.2 | -33.4 |
| Q4 | 14.4 | -1.2 | -4.1 | -12.4 | -3.4 | 3.3 | - | - | -29.6 | -22.6 |
| 2017 Sep. | 22.0 | -0.8 | -4.1 | -12.5 | -3.4 | 4.3 | - | - | -31.2 | -33.4 |
| Oct. | 8.6 | -1.3 | -5.2 | -12.6 | -3.7 | 3.9 | - | - | -17.4 | -17.6 |
| Nov. | 4.0 | -1.3 | -4.6 | -12.7 | -3.8 | 3.6 | - | - | -13.1 | 10.0 |
| Dec. | 14.4 | -1.2 | -4.1 | -12.4 | -3.4 | 3.3 | - | - | -29.6 | -22.6 |
| 2018 Jan. | 5.0 | -0.8 | -4.0 | -12.4 | -2.3 | 3.3 | - | - | -24.5 | -19.3 |
| Feb. [(p)] | 16.7 | -1.3 | -3.9 | -13.0 | -2.7 | 2.1 | - | - | -27.1 | -20.5 |

Source: ECB.

1) Data refer to the changing composition of the euro area.

2) Comprises central government holdings of deposits with the MFI sector and of securities issued by the MFI sector.

3) Not adjusted for seasonal effects.

# 6 Fiscal developments

## 6.1 Deficit/surplus

(as a percentage of GDP; flows during one-year period)

| | Deficit (-)/surplus (+) | | | | | Memo item: Primary deficit (-)/ surplus (+) |
|---|---|---|---|---|---|---|
| | Total | Central government | State government | Local government | Social security funds | |
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 2014 | -2.5 | -2.1 | -0.2 | 0.0 | -0.1 | 0.1 |
| 2015 | -2.0 | -1.9 | -0.2 | 0.2 | -0.1 | 0.3 |
| 2016 | -1.5 | -1.7 | -0.1 | 0.2 | 0.0 | 0.6 |
| 2017 | -0.9 | -1.3 | 0.1 | 0.2 | 0.1 | 1.1 |
| 2017 Q1 | -1.3 | . | . | . | . | 0.9 |
| Q2 | -1.2 | . | . | . | . | 0.8 |
| Q3 | -1.0 | . | . | . | . | 1.0 |
| Q4 | -0.9 | . | . | . | . | 1.1 |

Sources: ECB for annual data; Eurostat for quarterly data.

## 6.2 Revenue and expenditure

(as a percentage of GDP; flows during one-year period)

| | Revenue | | | | | | Expenditure | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Current revenue | | | | Capital revenue | Total | Current expenditure | | | | | Capital expenditure |
| | | | Direct taxes | Indirect taxes | Net social contributions | | | | Compen-sation of employees | Intermediate consumption | Interest | Social benefits | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 2014 | 46.7 | 46.2 | 12.5 | 13.1 | 15.4 | 0.5 | 49.2 | 45.3 | 10.3 | 5.3 | 2.6 | 23.0 | 4.0 |
| 2015 | 46.3 | 45.7 | 12.6 | 13.0 | 15.2 | 0.5 | 48.3 | 44.4 | 10.0 | 5.2 | 2.3 | 22.7 | 3.9 |
| 2016 | 46.1 | 45.7 | 12.6 | 13.0 | 15.3 | 0.5 | 47.6 | 44.0 | 10.0 | 5.2 | 2.1 | 22.8 | 3.5 |
| 2017 | 46.2 | 45.8 | 12.9 | 13.0 | 15.3 | 0.4 | 47.1 | 43.3 | 9.9 | 5.1 | 2.0 | 22.5 | 3.7 |
| 2017 Q1 | 46.2 | 45.7 | 12.7 | 13.0 | 15.3 | 0.5 | 47.4 | 43.9 | 9.9 | 5.2 | 2.1 | 22.7 | 3.6 |
| Q2 | 46.2 | 45.8 | 12.7 | 13.0 | 15.3 | 0.4 | 47.4 | 43.8 | 9.9 | 5.1 | 2.1 | 22.7 | 3.6 |
| Q3 | 46.2 | 45.8 | 12.8 | 13.0 | 15.3 | 0.4 | 47.2 | 43.5 | 9.9 | 5.1 | 2.0 | 22.6 | 3.7 |
| Q4 | 46.2 | 45.8 | 12.9 | 13.0 | 15.3 | 0.4 | 47.1 | 43.3 | 9.9 | 5.1 | 2.0 | 22.5 | 3.7 |

Sources: ECB for annual data; Eurostat for quarterly data.

## 6.3 Government debt-to-GDP ratio

(as a percentage of GDP; outstanding amounts at end of period)

| | Total | Financial instrument | | | Holder | | | Original maturity | | Residual maturity | | | Currency | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Currency and deposits | Loans | Debt securities | Resident creditors | MFIs | Non-resident creditors | Up to 1 year | Over 1 year | Up to 1 year | Over 1 and up to 5 years | Over 5 years | Euro or participating currencies | Other curren-cies |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 2014 | 91.9 | 2.7 | 17.1 | 72.0 | 44.0 | 25.6 | 47.9 | 10.0 | 81.9 | 18.8 | 31.9 | 41.2 | 89.8 | 2.1 |
| 2015 | 89.9 | 2.8 | 16.2 | 71.0 | 44.1 | 27.1 | 45.8 | 9.3 | 80.6 | 17.6 | 31.2 | 41.1 | 87.9 | 2.0 |
| 2016 | 89.0 | 2.7 | 15.5 | 70.8 | 46.1 | 30.4 | 42.9 | 9.0 | 80.0 | 17.2 | 29.9 | 41.9 | 87.0 | 2.0 |
| 2017 | 86.7 | 2.6 | 14.3 | 69.8 | 46.7 | 31.8 | 40.1 | 8.3 | 78.4 | 16.0 | 28.8 | 41.9 | 84.9 | 1.8 |
| 2017 Q1 | 89.2 | 2.6 | 15.2 | 71.4 | . | . | . | . | . | . | . | . | . | . |
| Q2 | 89.1 | 2.7 | 14.9 | 71.4 | . | . | . | . | . | . | . | . | . | . |
| Q3 | 88.1 | 2.8 | 14.7 | 70.7 | . | . | . | . | . | . | . | . | . | . |
| Q4 | 86.7 | 2.6 | 14.3 | 69.8 | . | . | . | . | . | . | . | . | . | . |

Sources: ECB for annual data; Eurostat for quarterly data.

# 6 Fiscal developments

## 6.4 Annual change in the government debt-to-GDP ratio and underlying factors [1)]

(as a percentage of GDP; flows during one-year period)

| | Change in debt-to-GDP ratio [2)] | Primary deficit (+)/ surplus (-) | Deficit-debt adjustment | | | | | | | | Interest-growth differential | Memo item: Borrowing requirement |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Total | Transactions in main financial assets | | | | | Revaluation effects and other changes in volume | Other | | |
| | | | | Total | Currency and deposits | Loans | Debt securities | Equity and investment fund shares | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 2014 | 0.3 | -0.1 | -0.2 | -0.5 | 0.2 | -0.5 | -0.3 | 0.0 | 0.1 | 0.2 | 0.6 | 2.2 |
| 2015 | -1.9 | -0.3 | -0.8 | -0.5 | 0.2 | -0.2 | -0.3 | -0.1 | 0.0 | -0.3 | -0.8 | 1.3 |
| 2016 | -1.0 | -0.6 | -0.2 | 0.3 | 0.3 | -0.1 | 0.0 | 0.1 | -0.3 | -0.2 | -0.1 | 1.6 |
| 2017 | -2.3 | -1.1 | -0.1 | 0.4 | 0.4 | 0.1 | -0.2 | 0.1 | -0.1 | -0.5 | -1.0 | 0.8 |
| 2017 Q1 | -1.7 | -0.9 | -0.5 | -0.1 | -0.1 | -0.1 | -0.1 | 0.1 | -0.3 | -0.1 | -0.4 | 1.0 |
| Q2 | -1.8 | -0.8 | -0.6 | -0.4 | -0.2 | -0.1 | -0.1 | 0.1 | -0.2 | 0.0 | -0.4 | 0.8 |
| Q3 | -1.6 | -1.0 | 0.1 | 0.7 | 0.8 | -0.1 | -0.1 | 0.1 | -0.1 | -0.5 | -0.7 | 1.2 |
| Q4 | -2.3 | -1.1 | -0.1 | 0.4 | 0.4 | 0.1 | -0.2 | 0.1 | -0.1 | -0.5 | -1.0 | 0.8 |

Sources: ECB for annual data; Eurostat for quarterly data.

1) Intergovernmental lending in the context of the financial crisis is consolidated except in quarterly data on the deficit-debt adjustment.

2) Calculated as the difference between the government debt-to-GDP ratios at the end of the reference period and a year earlier.

## 6.5 Government debt securities [1)]

(debt service as a percentage of GDP; flows during debt service period; average nominal yields in percentages per annum)

| | Debt service due within 1 year [2)] | | | | | Average residual maturity in years [3)] | Average nominal yields [4)] | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Principal | | Interest | | | Outstanding amounts | | | | | Transactions | |
| | | | Maturities of up to 3 months | | Maturities of up to 3 months | | Total | Floating rate | Zero coupon | Fixed rate | Maturities of up to 1 year | Issuance | Redemption |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 2015 | 14.7 | 12.8 | 4.3 | 1.9 | 0.5 | 6.6 | 2.9 | 1.4 | 0.1 | 3.3 | 3.0 | 0.4 | 1.2 |
| 2016 | 14.1 | 12.4 | 4.6 | 1.7 | 0.4 | 6.9 | 2.6 | 1.2 | -0.1 | 3.0 | 2.9 | 0.2 | 1.2 |
| 2017 | 12.9 | 11.2 | 4.2 | 1.7 | 0.4 | 7.1 | 2.4 | 1.1 | -0.2 | 2.8 | 2.3 | 0.3 | 1.1 |
| 2016 Q4 | 14.1 | 12.4 | 4.6 | 1.7 | 0.4 | 6.9 | 2.6 | 1.2 | -0.1 | 3.0 | 2.9 | 0.2 | 1.2 |
| 2017 Q1 | 13.9 | 12.2 | 4.2 | 1.7 | 0.4 | 6.9 | 2.6 | 1.2 | -0.2 | 3.0 | 2.9 | 0.2 | 1.1 |
| Q2 | 13.8 | 12.1 | 4.3 | 1.7 | 0.4 | 7.0 | 2.5 | 1.2 | -0.2 | 2.9 | 2.6 | 0.2 | 1.2 |
| Q3 | 13.0 | 11.3 | 3.8 | 1.7 | 0.4 | 7.1 | 2.5 | 1.1 | -0.2 | 2.9 | 2.5 | 0.2 | 1.1 |
| 2017 Oct. | 12.9 | 11.2 | 3.6 | 1.7 | 0.4 | 7.2 | 2.5 | 1.1 | -0.2 | 2.8 | 2.4 | 0.2 | 1.2 |
| Nov. | 12.9 | 11.2 | 3.8 | 1.7 | 0.4 | 7.2 | 2.4 | 1.1 | -0.2 | 2.8 | 2.4 | 0.2 | 1.2 |
| Dec. | 12.9 | 11.2 | 4.2 | 1.7 | 0.4 | 7.1 | 2.4 | 1.1 | -0.2 | 2.8 | 2.3 | 0.3 | 1.1 |
| 2018 Jan. | 12.7 | 11.1 | 4.2 | 1.6 | 0.4 | 7.2 | 2.4 | 1.1 | -0.2 | 2.8 | 2.2 | 0.4 | 1.2 |
| Feb. | 12.7 | 11.1 | 4.1 | 1.6 | 0.4 | 7.2 | 2.4 | 1.1 | -0.2 | 2.8 | 2.4 | 0.4 | 1.2 |
| Mar. | 13.0 | 11.4 | 4.2 | 1.6 | 0.4 | 7.2 | 2.4 | 1.1 | -0.2 | 2.8 | 2.4 | 0.4 | 1.1 |

Source: ECB.

1) At face value and not consolidated within the general government sector.

2) Excludes future payments on debt securities not yet outstanding and early redemptions.

3) Residual maturity at the end of the period.

4) Outstanding amounts at the end of the period; transactions as 12-month average.

# 6 Fiscal developments

## 6.6 Fiscal developments in euro area countries

(as a percentage of GDP; flows during one-year period and outstanding amounts at end of period)

| | Belgium | Germany | Estonia | Ireland | Greece | Spain | France | Italy | Cyprus |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | Government deficit (-)/surplus (+) | | | | | | | | |
| 2014 | -3.1 | 0.5 | 0.7 | -3.6 | -3.6 | -6.0 | -3.9 | -3.0 | -9.0 |
| 2015 | -2.5 | 0.8 | 0.1 | -1.9 | -5.7 | -5.3 | -3.6 | -2.6 | -1.3 |
| 2016 | -2.5 | 1.0 | -0.3 | -0.5 | 0.6 | -4.5 | -3.4 | -2.5 | 0.3 |
| 2017 | -1.0 | 1.3 | -0.3 | -0.3 | 0.8 | -3.1 | -2.6 | -2.3 | 1.8 |
| 2017 Q1 | -2.0 | 1.2 | -0.4 | -0.4 | 1.1 | -4.2 | -3.3 | -2.2 | 0.4 |
| Q2 | -1.6 | 1.0 | -0.7 | -0.5 | 1.1 | -3.6 | -3.2 | -2.5 | 0.8 |
| Q3 | -1.3 | 1.3 | -0.7 | -0.6 | 1.1 | -3.2 | -3.0 | -2.4 | 1.8 |
| Q4 | -1.0 | 1.3 | -0.3 | -0.3 | 0.8 | -3.1 | -2.6 | -2.3 | 1.8 |
| | Government debt | | | | | | | | |
| 2014 | 107.0 | 74.7 | 10.7 | 104.5 | 178.9 | 100.4 | 94.9 | 131.8 | 107.5 |
| 2015 | 106.1 | 71.0 | 10.0 | 76.9 | 176.8 | 99.4 | 95.6 | 131.5 | 107.5 |
| 2016 | 105.9 | 68.2 | 9.4 | 72.8 | 180.8 | 99.0 | 96.6 | 132.0 | 106.6 |
| 2017 | 103.1 | 64.1 | 9.0 | 68.0 | 178.6 | 98.3 | 97.0 | 131.8 | 97.5 |
| 2017 Q1 | 107.4 | 66.7 | 9.2 | 74.8 | 177.7 | 99.7 | 98.9 | 133.8 | 106.0 |
| Q2 | 106.1 | 66.1 | 8.9 | 74.1 | 176.1 | 99.5 | 99.3 | 134.9 | 105.7 |
| Q3 | 106.9 | 65.2 | 8.9 | 72.0 | 177.4 | 98.5 | 98.4 | 134.2 | 102.5 |
| Q4 | 103.1 | 64.1 | 9.0 | 68.0 | 178.6 | 98.3 | 97.0 | 131.8 | 97.5 |

| | Latvia | Lithuania | Luxembourg | Malta | Netherlands | Austria | Portugal | Slovenia | Slovakia | Finland |
|---|---|---|---|---|---|---|---|---|---|---|
| | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| | Government deficit (-)/surplus (+) | | | | | | | | | |
| 2014 | -1.5 | -0.6 | 1.3 | -1.8 | -2.3 | -2.7 | -7.2 | -5.5 | -2.7 | -3.2 |
| 2015 | -1.4 | -0.2 | 1.4 | -1.1 | -2.1 | -1.0 | -4.4 | -2.9 | -2.7 | -2.8 |
| 2016 | 0.1 | 0.3 | 1.6 | 1.0 | 0.4 | -1.6 | -2.0 | -1.9 | -2.2 | -1.8 |
| 2017 | -0.5 | 0.5 | 1.5 | 3.9 | 1.1 | -0.7 | -3.0 | 0.0 | -1.0 | -0.6 |
| 2017 Q1 | -0.3 | 0.8 | 0.8 | 2.0 | 1.0 | -0.9 | -3.8 | -1.3 | -2.0 | -1.5 |
| Q2 | 0.3 | 0.7 | 1.0 | 2.1 | 1.1 | -1.2 | -3.5 | -1.0 | -1.6 | -1.0 |
| Q3 | 0.1 | 0.9 | 1.4 | 3.3 | 1.2 | -0.9 | -2.4 | -0.5 | -1.6 | -1.1 |
| Q4 | -0.5 | 0.5 | 1.5 | 3.9 | 1.1 | -0.7 | -3.0 | 0.0 | -1.0 | -0.6 |
| | Government debt | | | | | | | | | |
| 2014 | 40.9 | 40.5 | 22.7 | 63.8 | 68.0 | 84.0 | 130.6 | 80.3 | 53.5 | 60.2 |
| 2015 | 36.8 | 42.6 | 22.0 | 58.7 | 64.6 | 84.6 | 128.8 | 82.6 | 52.3 | 63.5 |
| 2016 | 40.5 | 40.1 | 20.8 | 56.2 | 61.8 | 83.6 | 129.9 | 78.6 | 51.8 | 63.0 |
| 2017 | 40.1 | 39.7 | 23.0 | 50.8 | 56.7 | 78.4 | 125.7 | 73.6 | 50.9 | 61.4 |
| 2017 Q1 | 39.3 | 39.2 | 23.9 | 56.6 | 59.5 | 81.7 | 130.1 | 80.3 | 53.3 | 62.7 |
| Q2 | 39.9 | 41.7 | 23.4 | 55.0 | 58.6 | 81.4 | 131.7 | 79.8 | 51.7 | 61.7 |
| Q3 | 38.2 | 39.4 | 23.4 | 53.4 | 56.9 | 80.2 | 130.5 | 78.5 | 51.3 | 60.5 |
| Q4 | 40.1 | 39.7 | 23.0 | 50.8 | 56.7 | 78.4 | 125.7 | 73.6 | 50.9 | 61.4 |

Source: Eurostat.

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