EUROPEAN CENTRAL BANK

EUROSYSTEM

Economic Bulletin

Issue 4 / 2017

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Economic and monetary developments

Overview

At its monetary policy meeting on 8 June 2017, the Governing Council concluded that a very substantial degree of monetary accommodation is still needed for underlying inflation pressures to build up and support headline inflation in the medium term. The information that has become available since the previous monetary policy meeting in late April confirms a stronger momentum in the euro area economy, which is projected to expand at a somewhat faster pace than previously expected. The Governing Council considers that the risks to the growth outlook are now broadly balanced. Against this background, very adverse scenarios for the outlook for price stability have become increasingly unlikely to materialise, in particular as deflation risks have largely vanished. Hence, the Governing Council decided to drop the reference to lower interest rates from its forward guidance on policy rates. At the same time, the economic expansion has yet to translate into stronger inflation dynamics. So far, measures of underlying inflation continue to remain subdued and have yet to show a convincing upward trend. Therefore, the very substantial degree of monetary accommodation remains appropriate.

Economic and monetary assessment at the time of the Governing Council meeting of 8 June 2017

The ECB's monetary policy measures have continued to preserve the very favourable financing conditions that are necessary to secure a sustained convergence of inflation rates towards levels below, but close to, 2% over the medium term. This is evident in continued very low bank interest rates. Likewise, the pass-through of the monetary policy measures put in place since June 2014 continues to significantly support borrowing conditions for firms and households, access to financing, notably for small and medium-sized enterprises, and, hence, credit flows across the euro area. Broad money continues to expand at a robust pace, while the recovery in loan growth to the private sector observed since the beginning of 2014 is proceeding.

The ongoing economic expansion in the euro area is increasingly resilient and has broadened across sectors and countries. Euro area real GDP increased by 0.6%, quarter on quarter, in the first quarter of 2017, after 0.5% in the last quarter of 2016. Short-term indicators such as surveys continue to point to robust growth momentum in the near term. The pass-through of the ECB's monetary policy measures has also facilitated the deleveraging process and should continue to support domestic demand. In particular, the recovery in investment continues to benefit from very favourable financing conditions and improvements in corporate profitability. Employment gains, which are also benefiting from past labour market reforms, are supporting real disposable income and private consumption.

Euro area activity is further supported by a sustained global recovery. Global trade growth has increased significantly in recent months, benefiting from, among other factors, the recoveries in emerging market economies. However, euro area economic growth prospects continue to be dampened by a sluggish pace of implementation of structural reforms, in particular in product markets, and by remaining balance sheet adjustment needs in a number of sectors, notwithstanding ongoing improvements.

The June 2017 Eurosystem staff macroeconomic projections for the euro area, finalised in late May, which are conditional on the full implementation of all ECB monetary policy measures, foresee annual real GDP increasing by 1.9% in 2017, by 1.8% in 2018 and by 1.7% in 2019. Compared with the March 2017 ECB staff macroeconomic projections, the outlook for real GDP growth has been revised upwards over the projection horizon. The risks surrounding the euro area growth outlook are considered to be broadly balanced. On the one hand, the current positive cyclical momentum increases the chances of a stronger than expected economic upswing. On the other hand, downside risks relating to predominantly global factors continue to exist.

According to Eurostat's flash estimate, euro area annual HICP inflation was 1.4% in May, following 1.9% in April and 1.5% in March. As expected, the recent volatility in inflation rates was mainly due to energy prices and temporary increases in services prices over the Easter period. Following the recent fall in oil prices, global headline inflation has stabilised. Looking ahead, on the basis of current futures prices for oil, headline inflation in the euro area is likely to remain around recent levels in the coming months.

Measures of underlying inflation have remained low and have yet to show convincing signs of a pick-up, as unutilised resources are still weighing on domestic price and wage formation. Underlying inflation is expected to rise only gradually over the medium term, supported by the ECB's monetary policy measures, the continuing economic expansion and the corresponding gradual absorption of economic slack.

The June 2017 Eurosystem staff macroeconomic projections for the euro area foresee annual HICP inflation at 1.5% in 2017, 1.3% in 2018 and 1.6% in 2019. By comparison with the March 2017 ECB staff macroeconomic projections, the outlook for headline HICP inflation has been revised downwards, mainly reflecting lower oil prices.

The euro area budget deficit is projected to fall further over the projection horizon (2017-19), mainly as a result of improving cyclical conditions and decreasing interest payments. The aggregate fiscal stance for the euro area is projected to be broadly neutral over the period 2017-19. The euro area government debt-to-GDP ratio, although still high, is projected to continue to decline. Countries with high levels of public debt would benefit from additional consolidation efforts to set their debt-to-GDP ratio firmly on a downward path.

Monetary policy decisions

Based on the regular economic and monetary analyses, the Governing Council confirmed the need for a continued very substantial degree of monetary accommodation to secure a sustained return of inflation rates towards levels that are below, but close to, 2%. The Governing Council decided to keep the key ECB interest rates unchanged and expects 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 under the asset purchase programme (APP), at the current monthly pace of €60 billion, are intended to run until the end of December 2017, or beyond, if necessary, and in any case until the Governing Council sees a sustained adjustment in the path of inflation consistent with its inflation aim. The net purchases will be made alongside reinvestments of the principal payments from maturing securities purchased under the APP. Moreover, the Governing Council confirmed that if the outlook became less favourable, or if financial conditions became inconsistent with further progress towards a sustained adjustment in the path of inflation, it would stand ready to increase the APP in terms of size and/or duration.

1 External environment

A temporary dip in global GDP growth in the first quarter of 2017 notwithstanding, global activity growth remained sustained in the first months of the year. Momentum in global trade improved markedly, driven mostly by increased trade from emerging market economies. Global headline inflation has stabilised in recent months, as the effect of past commodity price increases has diminished. However, oil prices have declined in recent weeks, which should dampen global inflation rates in the short term.

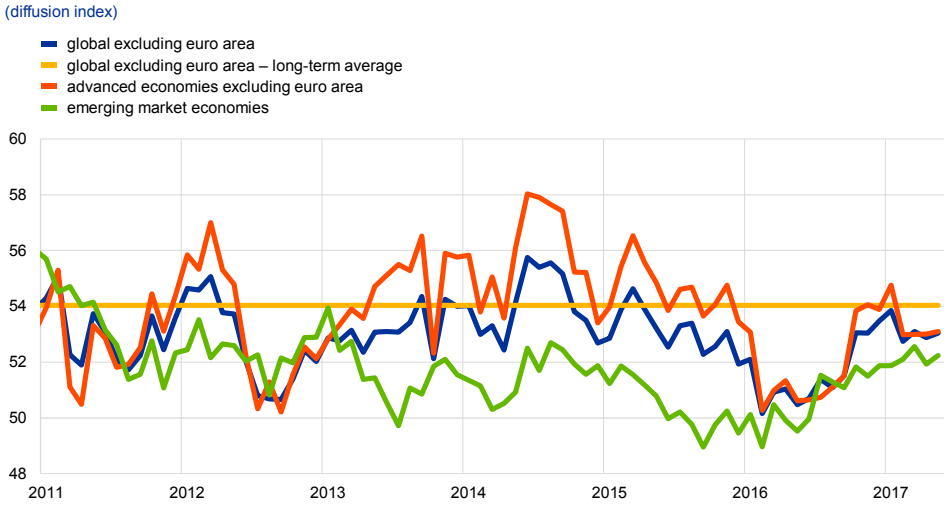
Global economic activity and trade

A temporary dip in global GDP growth in the first quarter of 2017 notwithstanding, global activity growth remained sustained at the start of year. In the United States, GDP growth fell to 0.3% quarter-on-quarter, mainly reflecting weaker consumer spending and a large reduction in inventory investment spending. In the United Kingdom, GDP growth also declined, as higher inflation following the depreciation of the pound sterling squeezed real incomes and household spending. In China, the decline in GDP growth to 1.3% quarter-on-quarter was somewhat at odds with more upbeat short-term indicators. On the other hand, GDP growth rebounded sharply in both Russia and Brazil as they exited recession, while, in India, activity growth recovered amid the waning effects of demonetisation.

Survey indicators suggest that global growth will rebound in the near term. Excluding the euro area, the global composite Purchasing Managers' Index (PMI) was largely unchanged in May, remaining slightly below the long-run average level and signalling a continued moderate expansion in global activity (Chart 1). Sentiment surveys have been upbeat, with consumer confidence in OECD countries rising towards pre-crisis levels and business confidence also improving.

Chart 1

Global composite output PMI



Sources: Haver Analytics and ECB staff calculations.
Notes: The latest observations are for May 2017. "Long-term average" refers to the period from January 1999 to May 2017.

Financial markets are consistent with expectations of improving near-term global growth. Having risen sharply after the US election, global equity markets and long-term bond yields declined in April and early May amid investor doubts about the ability of the new US administration to follow through on policy promises. However, global markets rebounded sharply after the French presidential election. Overall, financial markets have generally been resilient and risk aversion low. Financial conditions in emerging market economies (EMEs) are also benefitting from expectations of a brighter global growth outlook and capital flows towards EMEs have revived.

Monetary policies remain accommodative. While other major central banks are expected to maintain their accommodative stance, markets continue to expect monetary tightening in the United States to be very gradual. In China, financial conditions have tightened as the People's Bank of China increased interbank rates in an effort to curb the riskier lending of small banks and non-bank institutions. However, benchmark bank lending rates for non-financial firms have remained unchanged, suggesting that, so far, the impact on the broader economy is modest.

Looking ahead, after a rebound in the near term, global economic activity is expected to accelerate gradually. The outlook among advanced economies entails a modest expansion, underpinned by continued monetary and fiscal policy support, as the cyclical recovery continues and output gaps gradually close. Among EMEs, the outlook is supported by resilient growth in China and India, while activity is expected to strengthen among commodity exporters. The recovery of these latter economies is the main driver of the projected increase in global GDP growth in the next two years. Nonetheless, the pace of global expansion will remain below pre-crisis rates, which is consistent with estimates suggesting that the growth potential has declined across most advanced and emerging economies in recent years.

In the United States, activity is expected to strengthen. After the weak first quarter, a strong rebound is expected in the remainder of 2017, as consumer and business sentiment remain high and improved labour market conditions gradually feed into higher wage growth. A strong recovery in investment in the energy sector is also expected to support the economy.

In the United Kingdom, real GDP growth is expected to remain relatively muted in the near term. Although the depreciation of the pound sterling is likely to support exports, the increase in inflation is expected to weigh on household incomes and private consumption. Heightened uncertainty about the United Kingdom's future trade arrangements are also anticipated to weigh on investment.

In Japan, accommodative policies are expected to continue to support expansion. Accommodative monetary policy, looser financial conditions and the fiscal stimulus programme should support domestic demand, while exports are expected to gradually recover as external demand improves. However, despite robust job creation, wage increases have remained modest, dampening private consumption.

In China, activity is expected to continue expanding at a robust pace, supported by resilient consumption and the buoyant housing market. However, an increased focus on containing financial stability risks has led to tighter financial conditions since late 2016. In the medium term, growth is anticipated to remain on a gradual downward trend, consistent with the authorities' desire to rebalance the economy.

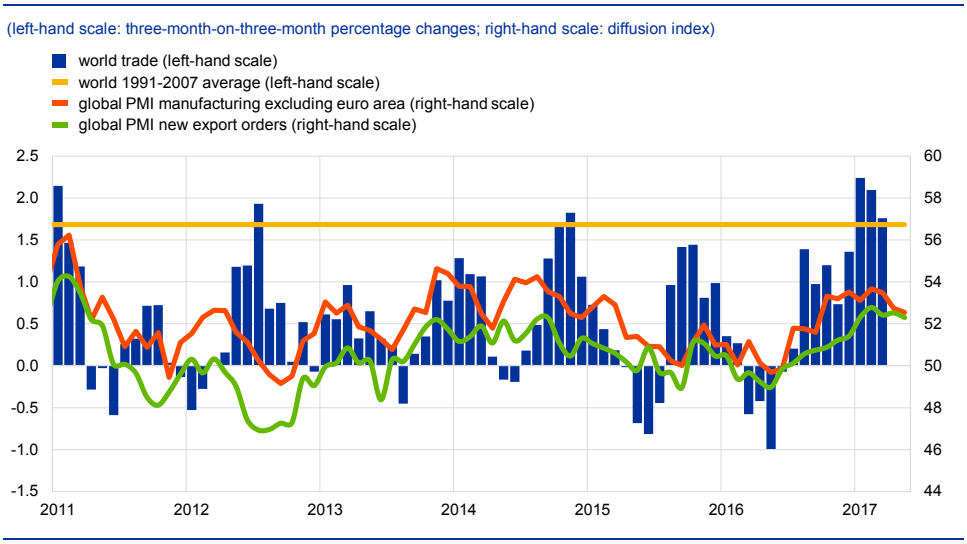
Central and eastern European countries are expected to benefit from strong consumption and investment, the latter supported by EU structural funds. Although inflation is expected to gradually increase, reflecting fading effects of energy price falls, real disposable income is also expected to strengthen as the labour market tightens and wage pressures increase.

The large commodity exporters are expected to continue their recovery after deep recessions. In Russia, the rebound in the oil price since last year, coupled with a more accommodative monetary policy, is expected to support growth, although domestic demand remains fragile amid high uncertainty, low real wages and depressed confidence. Stabilising business confidence, improving terms of trade and loosening financial conditions are anticipated to benefit activity in Brazil. At the same time, recurring political uncertainties and fiscal consolidation needs continue to weigh on the medium-term outlook.

Momentum in global trade improved markedly at the end of last year and in early 2017. The volume of global goods imports increased by 1.8% quarter-on-quarter in the first quarter of 2017 (Chart 2). The recovery in global trade during the second half of 2016 and early 2017 has been driven mostly by an improvement in EMEs, with trade in emerging Asia benefiting from Chinese investment following a policy stimulus. Leading indicators point to continued robust trade prospects in the near term, with the global PMI for new export orders at 52.3 in May. Looking further ahead, while the outlook is subject to some uncertainties arising from the new US

administration's rhetoric on trade policies, world trade is expected to expand broadly in line with global activity.

Chart 2
World trade in goods



Sources: Markit, CPB and ECB calculations.
Note: The latest observations are for May 2017 (PMIs) and March 2017 (trade).

Overall, global growth is projected to increase gradually over the period 2017-19. According to the June 2017 Eurosystem staff macroeconomic projections, world real GDP growth excluding the euro area is projected to accelerate from 3.2% in 2016 to 3.5% in 2017 and 3.8% in 2018-19. Euro area foreign demand growth is expected to increase from 1.3% in 2016 to 3.7% in 2017, followed by growth of 3.4% in 2018 and 3.5% in 2019. Compared with the March 2017 projections, global GDP growth is largely unrevised, while euro area foreign demand growth has been revised upwards for 2017, reflecting stronger import data around the turn of the year.

The uncertainty surrounding the baseline projections for global activity remains elevated, with the balance of risks tilted to the downside. On the upside, there is the possibility that improved sentiment – as evidenced in surveys and financial markets – will translate into a faster-than-expected revival of activity and trade in the short term. Key downside risks include an increase in trade protectionism; a disorderly tightening of global financial conditions, which could affect vulnerable EMEs in particular; possible disruptions associated with China's reform and liberalisation process; and the potential for volatility derived from political and geopolitical uncertainties, including those related to negotiations about future relations between the United Kingdom and the European Union. Box 1 discusses the evolution of global risks in the past year.

Global price developments

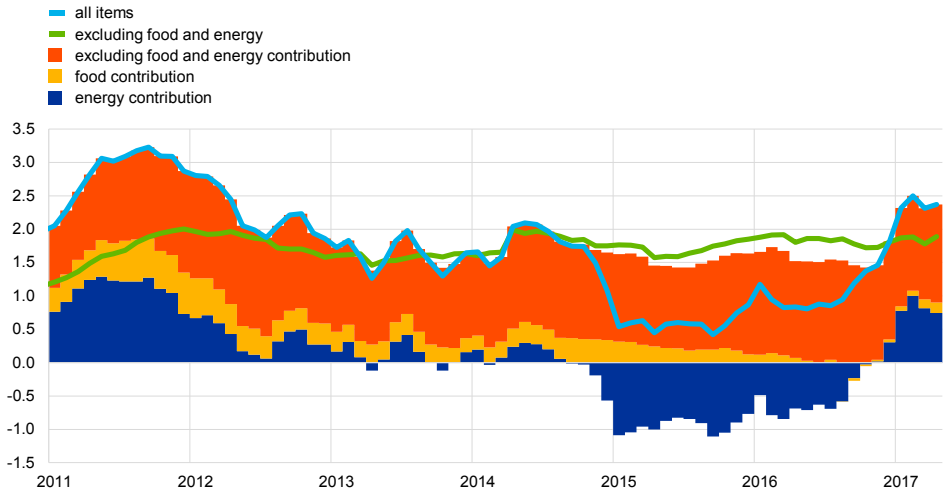
Global consumer price inflation has stabilised as the effect of past commodity price increases begins to wane. Annual consumer price inflation in the OECD area

edged up to 2.4% in April, compared with 2.3% in March. Excluding food and energy, OECD annual inflation increased slightly to 1.9% in April (Chart 3).

Chart 3

OECD consumer price inflation

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



Source: OECD.
Note: The latest observation is for April 2017.

Commodity prices have fallen recently. Brent crude oil prices have fluctuated in the range of USD 48 to USD 56 per barrel since early March. The price fluctuations reflect shifting concerns among market participants about the likely success of the OPEC strategy to curtail production, amid still high oil inventories and rising US shale production. The prolongation of the output cut for nine months, which was agreed by OPEC and 11 non-OPEC countries on 25 May 2017, was widely anticipated by markets and priced in before the meeting. Hopes raised by some participating countries that there might be agreement on an even deeper or longer cut did not materialise, which led to a renewed price drop in the aftermath of the meeting of about 6% in US dollar terms. Looking ahead, the futures curve is signalling largely unchanged oil prices over the next three years. Non-oil commodity prices have declined by about 8% since early March.

Looking ahead, after a slight moderation in the near term, global inflation is expected to rise slowly. The recent decline in oil and other commodity prices should dampen inflation rates in the short term. Thereafter, slowly diminishing spare capacity at the global level is expected to support underlying inflation, while the current oil futures curve anticipates very stable oil prices over the projection horizon, pointing to a very limited contribution from energy prices to inflation.

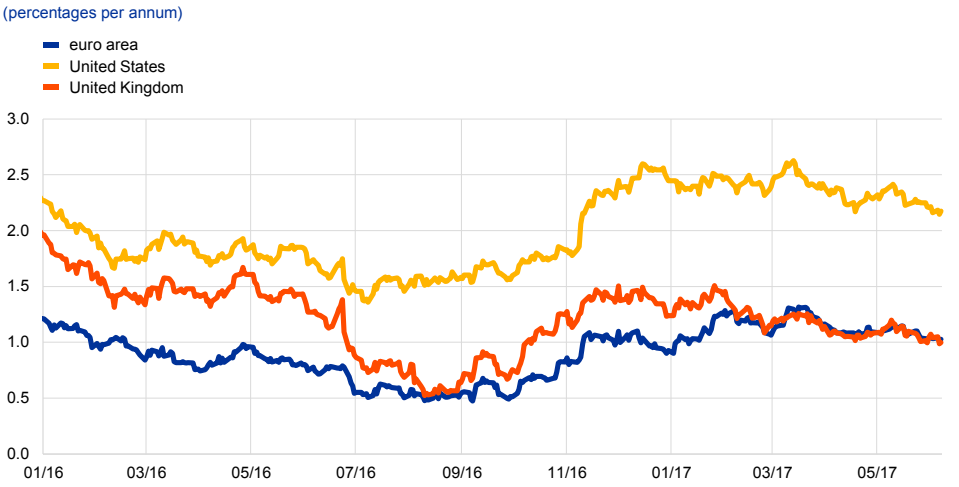
2 Financial developments

Since the Governing Council's monetary policy meeting in March, euro area sovereign bond yields have declined slightly, with some intra-period volatility. Corporate bond spreads have declined marginally and remain below the levels observed in early March 2016, when the corporate sector purchase programme (CSPP) was announced. Broad equity prices have risen by a larger extent in the euro area than in other major economic areas. The value of the euro has appreciated in trade-weighted terms.

Long-term euro area government bond yields have decreased slightly overall since early March. During the period under review, from 9 March to 7 June 2017, the ten-year euro area overnight index swap (OIS) rate declined by around 10 basis points to 0.55%, while the GDP-weighted ten-year euro area sovereign bond yield decreased by around 25 basis points to just above 1% (see Chart 4). This decline brought to halt the period of rising nominal yields that had been ongoing in the euro area, although with some oscillations, since early October 2016. In the United States, long-term government bond yields declined more than in the euro area, but from a higher level, declining by around 45 basis points to 2.2%. The slight decline in long-term euro area interest rates since early March took place amid some volatile episodes caused by a number of factors. Long-term euro area government bond yields initially rose in the aftermath of the March Governing Council Meeting, but towards the end of March they declined, partly on account of market perceptions of increased political uncertainty in the run-up to the first round of the French presidential election. However, in the course of April, yields began to rise again amid a decline in political uncertainty and positive data releases for the euro area economy. In the remainder of the review period, long-term euro area government bond yields recorded slight declines on the back of some moderation in global inflation expectations and more negative economic surprises abroad.

Chart 4

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

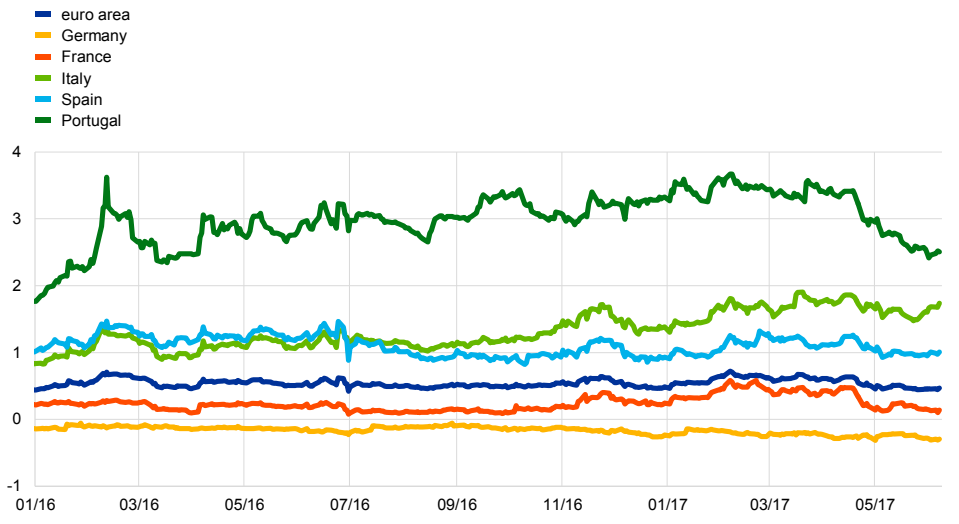


Sources: Bloomberg and ECB.
Notes: For the euro area, the GDP-weighted average of ten-year euro area sovereign bond yields is reported. The latest observation is for 7 June 2017.

Sovereign bond yields declined markedly in a number of countries, mainly on account of the declining political uncertainty since late April as well as an improving economic outlook. Across countries, the declines ranged from a few basis points to around 120 points in Greece and Portugal. Sovereign yield spreads vis-à-vis the OIS also declined overall, mostly since the second half of April (see Chart 5).

Chart 5

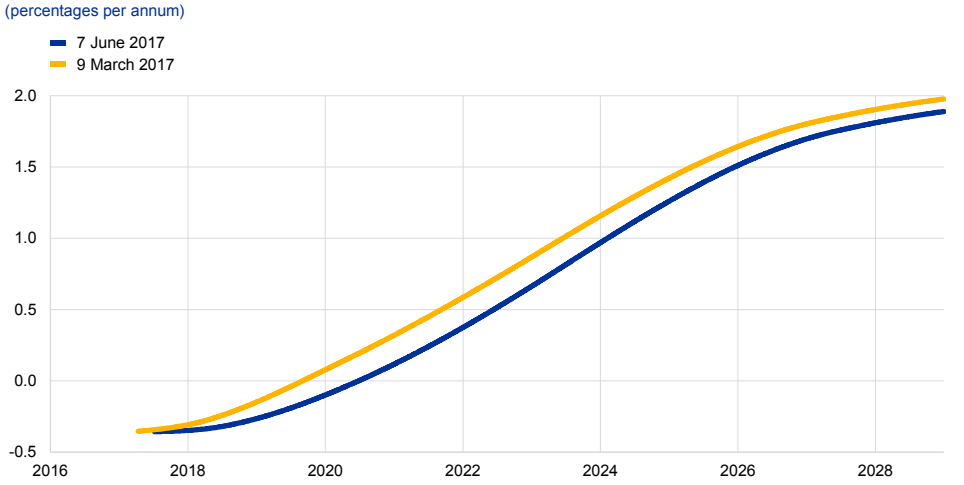
Euro area sovereign spreads vis-à-vis the euro area OIS rate



Sources: Thomson Reuters and ECB calculations.
Notes: The spread is calculated by subtracting the OIS rate from the sovereign yield. For the euro area, the GDP-weighted average of ten-year sovereign yields is reported. The latest observation is for 7 June 2017.

The euro overnight index average (EONIA) forward curve has shifted downwards by slightly more than 10 basis points on average across maturities since early March (see Chart 6). An initial upward movement of the curve, until around mid-March, was more than reversed in the remainder of the review period. Overall, the EONIA forward curve shifted downwards on average by 13 basis points, with a fall of around 20 basis points for maturities ranging approximately between three and five years. By contrast, forward rates declined rather marginally for maturities up to two years. The configuration of the curve on 7 June suggests that market participants continue to expect a prolonged period of negative EONIA rates until around mid-2020, with no further cuts to the deposit facility rate (DFR) being priced in.

Chart 6
EONIA forward rates



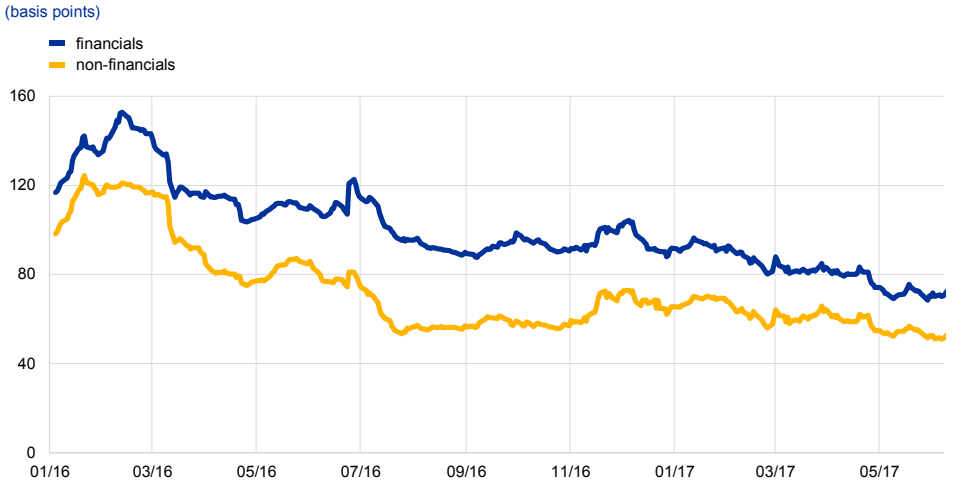
Sources: Thomson Reuters and ECB calculations.

The EONIA hovered around -35 basis points in the period under review. It reached a record low of -37.3 basis points on 5 June amid subdued trading volumes owing to national holidays in several countries. Excess liquidity increased by over €305 billion to around €1,670 billion. This increase is attributable both to the final targeted longer-term refinancing operation (TLTRO-II) and to purchases under the expanded asset purchase programme. Liquidity conditions are discussed in more detail in Box 3.

Spreads on bonds issued by non-financial corporations (NFCs) declined marginally during the period under review (see Chart 7). On 7 June investment grade NFC bond spreads (for rating classes AA, A and BBB) were on average 9 basis points lower than in early March and around 30 basis points below their levels in March 2016, when the Governing Council announced the launch of the CSPP. Spreads on non-investment grade NFC and financial sector debt (which is ineligible for purchases under the CSPP) also declined during the period under review, by 26 and 5 basis points respectively.

Chart 7

Euro area corporate bond spreads

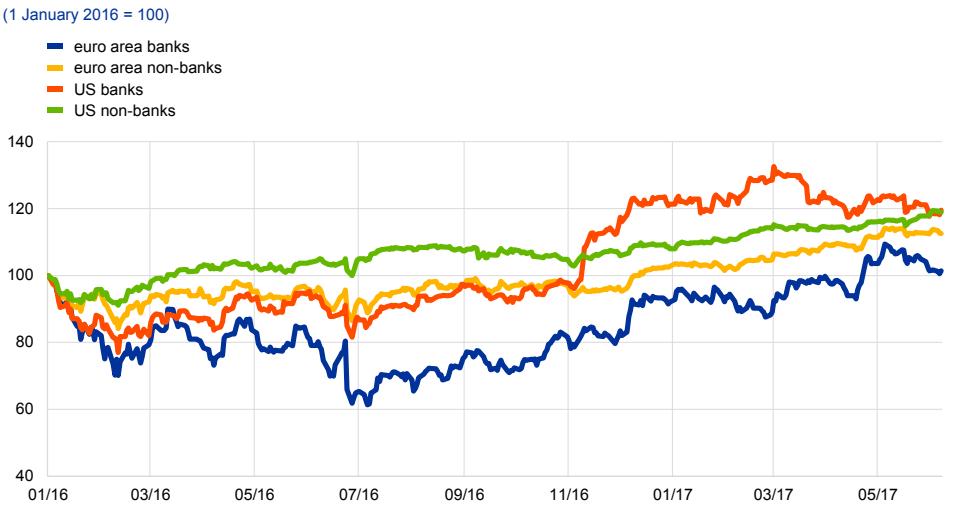


Sources: iBoxx indices and ECB calculations.
Note: The latest observation is for 7 June 2017.

Euro area equity prices have increased since early March (see Chart 8), thus continuing a trend that has been in place since around mid-2016. At the end of the period under review, equity prices of euro area NFCs were around 7.5% higher than at the beginning, while prices rose by 5.5% for financial corporations. Following recent positive developments in euro area stock markets, equity prices of banks now stand around 65% higher overall than the lows recorded in the aftermath of the United Kingdom's referendum on EU membership in June 2016 (see Chart 8). As in the case of bonds, political uncertainty also affected developments in euro area equity markets, which mostly moved sideways ahead of the outcome of the first round of the French presidential election, but then rose significantly in the aftermath. Since early March, equity prices of NFCs in the United States, the United Kingdom and Japan have also risen, but by a lesser extent than in the euro area. Equity prices of financial corporations in these three countries underperformed even more relative to the euro area than was the case for NFCs. Market expectations of equity price volatility in the euro area increased significantly ahead of the French presidential election to around 23%, but thereafter they reverted to slightly below the levels prevailing in early March, i.e. around 13%. In the United States, expectations of equity price volatility declined overall to below 9%.

Chart 8

Euro area and US equity price indices

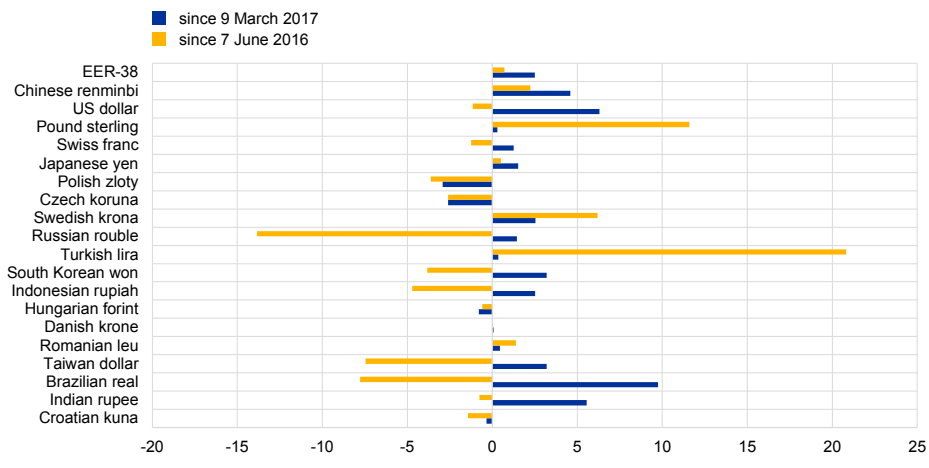


Sources: Thomson Reuters, iBoxx indices and ECB calculations.
Note: The latest observation is for 7 June 2017.

In foreign exchange markets, the euro has appreciated by 2.5% in trade-weighted terms since early March (see Chart 9). In particular, the euro appreciated vis-à-vis most other major currencies, reflecting positive surprises for the euro area economy. In bilateral terms, since 9 March, the euro has strengthened by 6.3% against the US dollar, by 4.6% against the Chinese renminbi, by 1.5% against the Japanese yen and by 1.3% against the Swiss franc. The euro also appreciated vis-à-vis the currencies of most emerging economies as well as the currencies of non-euro area EU Member States, with the exception of the currencies of some central and eastern European Member States, including the Czech koruna, the Polish zloty and the Hungarian forint, against which it weakened.

Chart 9

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



Source: ECB.
Note: 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 are computed using the exchange rates prevailing on 7 June 2017.

3 Economic activity

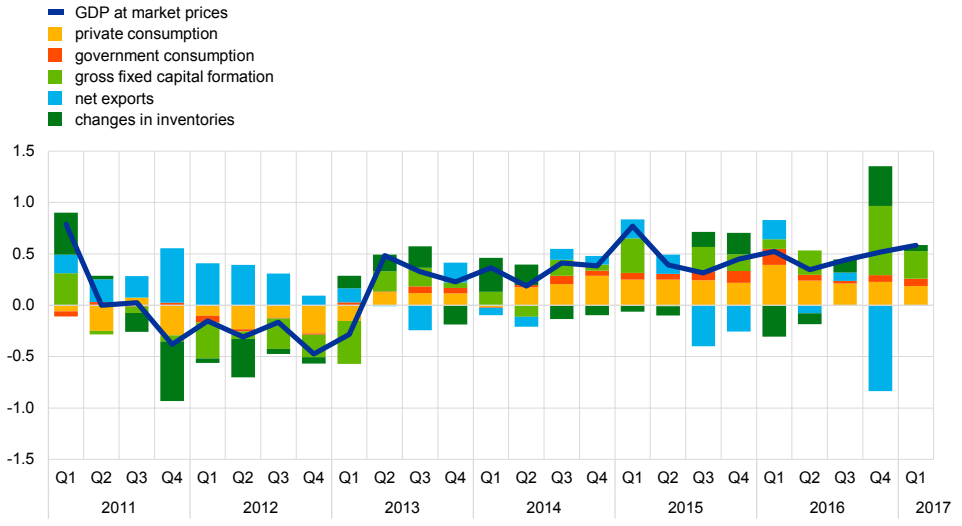
The ongoing economic expansion is increasingly resilient and has broadened across sectors and countries. Euro area growth is supported primarily by domestic demand, although tailwinds from the external environment have increasingly lent support to the outlook. Short-term indicators, such as surveys, confirm robust growth momentum in the near term. Compared with the March 2017 ECB staff macroeconomic projections, the June 2017 Eurosystem staff macroeconomic projections have been revised upwards and foresee euro area real GDP growing by 1.9% in 2017, 1.8% in 2018 and 1.7% in 2019.

The euro area economic expansion has gained momentum and is primarily supported by domestic demand. Real GDP increased by 0.6%, quarter on quarter, in the first quarter of 2017, following growth of 0.5% in the previous quarter (Chart 10). The euro area economy has now expanded for four consecutive years and growth has become increasingly resilient as it has broadened across sectors and countries. Domestic demand remained the engine behind growth in the first quarter of 2017 and changes in inventories contributed positively, whereas net trade provided a neutral contribution. On the production side, economic activity was mainly supported by robust growth in the construction and services sectors, whereas value added in industry (excluding construction) grew at a slower pace.

Chart 10

Euro area real GDP and its components

(quarter-on-quarter percentage changes and quarter-on-quarter percentage point contributions)



Source: Eurostat.
Notes: The latest observations are for the first quarter of 2017. The large movements in gross fixed capital formation and net exports in the fourth quarter of 2016 largely reflected the transaction of assets by a small number of large economic operators in Ireland.

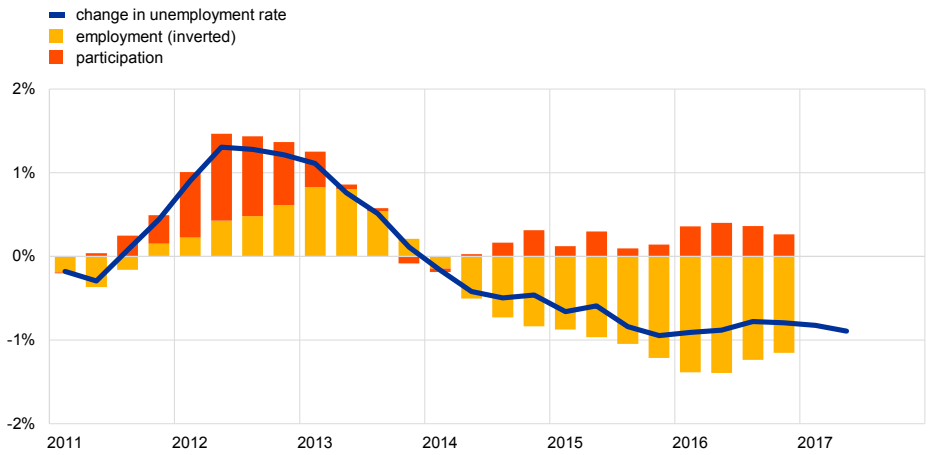
The recovery is particularly visible in euro area labour markets, although there is still sizeable slack. Growth in euro area employment continued in the fourth quarter of 2016 and, as a result, employment stood 1.2% above the level recorded one year earlier. Survey data available up to May suggest further improvements in labour market conditions. Euro area unemployment has continued to decline in 2017 after having peaked at the beginning of 2013. In April the unemployment rate stood

at 9.3%, the lowest reading since March 2009. The broad trend of declining unemployment rates has continued, despite continued increases in euro area labour force participation (see Chart 11), which has been buoyed in particular by rising participation among older workers. Moreover, broader measures of unemployment suggest still elevated slack in euro area labour markets, even though the gap between the headline unemployment rate and broader measures has been narrowing recently on account of modest declines in the numbers of both discouraged and underemployed workers.[1]

Chart 11

Decomposition of the decline in euro area unemployment

(year-on-year percentage changes in the euro area unemployment rate and percentage point contributions)



Sources: Eurostat and ECB calculations.
Note: The latest observations are for the fourth quarter of 2016 for employment and the participation rate and April 2017 for the unemployment rate.

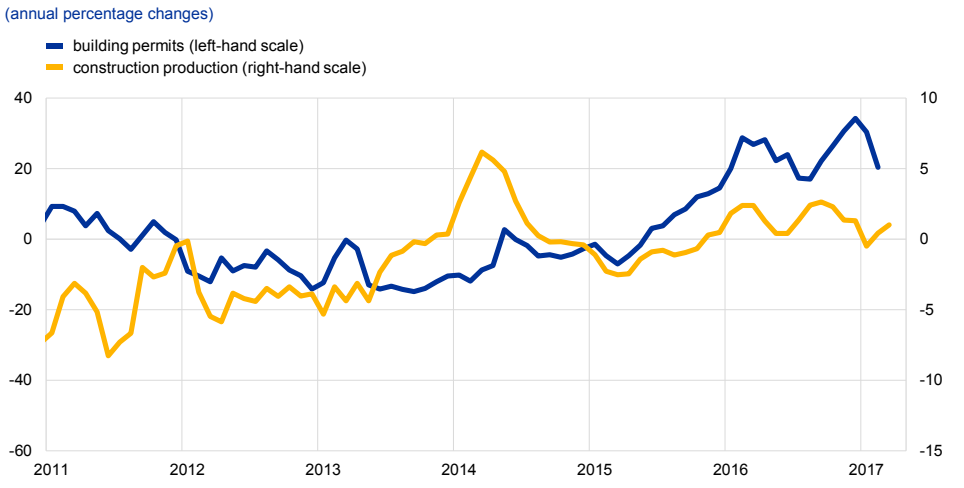
Improvements in euro area labour markets have boosted households' real disposable incomes and facilitated consumer spending. Steady labour income growth, which is the most important driver of household disposable income, in combination with a broadly stable household savings rate, has continued to benefit private consumption. Improving bank lending conditions, reinforced by the ECB's monetary policy measures, have also remained supportive of household spending. While low interest rates affect both households' interest earnings and their interest payments, they tend to redistribute resources from net savers to net borrowers. As the latter typically have a higher marginal propensity to consume, this redistribution should provide further support to aggregate private consumption. Consumer confidence, which rose again in May for the third consecutive month, remains well above its long-term average level, signalling strong underlying consumer spending dynamics in the near term. In addition, the increase in households' net worth, which reflects developments in both financial and housing wealth, should also support private consumption.

The rebound in euro area housing markets is increasingly supporting growth momentum. Although the recovery in euro area housing markets has been tardier

[1] See the box entitled "Assessing labour market slack", *Economic Bulletin*, Issue 3, ECB, 2017.

and much weaker than the recovery in overall euro area economic activity, it has recently gained momentum. This recovery, albeit from very low levels in some countries, has been supported by the strong growth in household disposable income, favourable financing conditions and an increased preference for housing investment in the context of low yields on interest-bearing assets. In addition, the adjustment processes in the housing markets in some euro area countries appear to have come to an end and confidence has risen strongly in the construction sector. A rising number of building permits (see Chart 12), increasing demand for loans for house purchase and improved bank lending conditions should continue to support the ongoing upward trend in construction investment, which is broad-based across euro area countries.

Chart 12
Building permits and construction production



Sources: Eurostat and ECB calculations.
Notes: Calculated from three-month moving averages. The latest observations are for February 2017 for building permits and March 2017 for construction production.

Business investment is continuing its gradual recovery. Industrial production in the investment-intensive capital goods sector grew by a modest 0.3% in the first quarter of 2017. Meanwhile, data available for most euro area countries point to a strong rise in non-construction investment. Moreover, business sentiment in the sector strengthened further on the back of very favourable production expectations, rising order books and a turnaround in selling price expectations, while capacity utilisation further increased to stand above average pre-crisis levels. According to the European Commission's latest bi-annual industrial investment survey, the investment outlook for 2017 in the euro area has improved.

Looking ahead, the recovery in business investment is expected to continue. It will be supported by several factors, including still very favourable financing conditions, the ECB's very accommodative monetary policy, a need to modernise the capital stock after several years of subdued investment, above-average capacity utilisation rates, and high profit mark-ups in the non-financial sector. In addition, the strong recovery in equity prices over recent years and moderate growth in debt financing have reduced the leverage ratio (debt-to-total assets) to historical lows (see the box entitled "Private sector indebtedness and deleveraging in the euro area

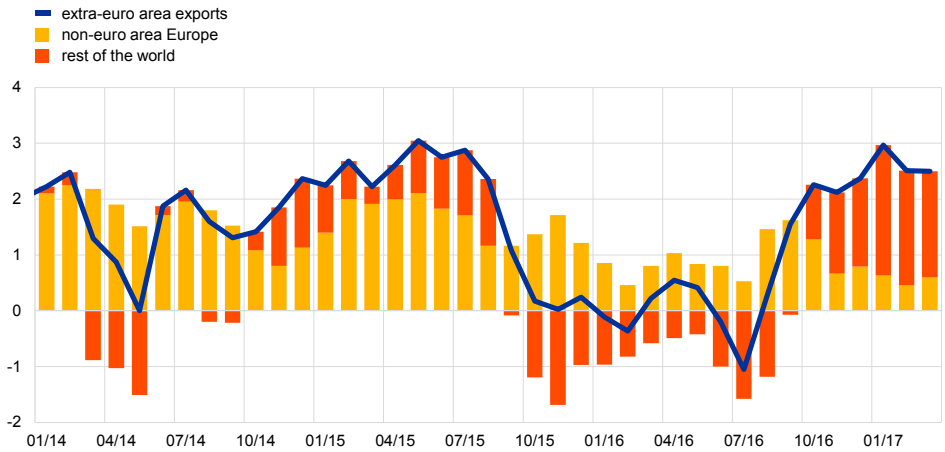
countries" in this issue of the Economic Bulletin for an overview of the evolution of total private sector deleveraging). Some factors, however, are expected to continue to weigh on the outlook for business investment. These include expectations of weaker long-term growth potential compared to the past, rigidities in product markets and ongoing adjustment to changes in the regulatory environment. Low bank profitability and the still high level of non-performing loans on banks' balance sheets in a number of countries continue to weigh on the intermediation capacity of banks and, in turn, on firms' investment funding in the near term.

An improved external environment has led to a rebound in euro area export momentum. Monthly trade data up to March 2017 point to continued growth in goods exports outside the euro area, following a rather strong export outcome in the fourth quarter of 2016. This bodes well for the overall growth outlook, as export growth has increasingly been driven by stronger demand from both Europe and the rest of the world. Specifically, exports to China, the United States and Russia have increased strongly over the past three months. This is in sharp contrast to the experience over the past three years, when exports were mainly supported by trade within Europe (Chart 13), and mirrors the increasingly broad-based global recovery in trade. Surveys and new export orders with a bearing on the second quarter of 2017 point to sustained export momentum in the near term. Looking further ahead, exports are expected to expand following the rebound in global trade. However, risks to trade remain elevated, primarily relating to an increase in protectionism that has the potential to hamper global growth.

Chart 13

Extra-euro area goods exports

(annual percentage changes in three-month moving averages and percentage point contributions)



Source: Eurostat.
Note: The data concern volumes and the latest observations are for March 2017.

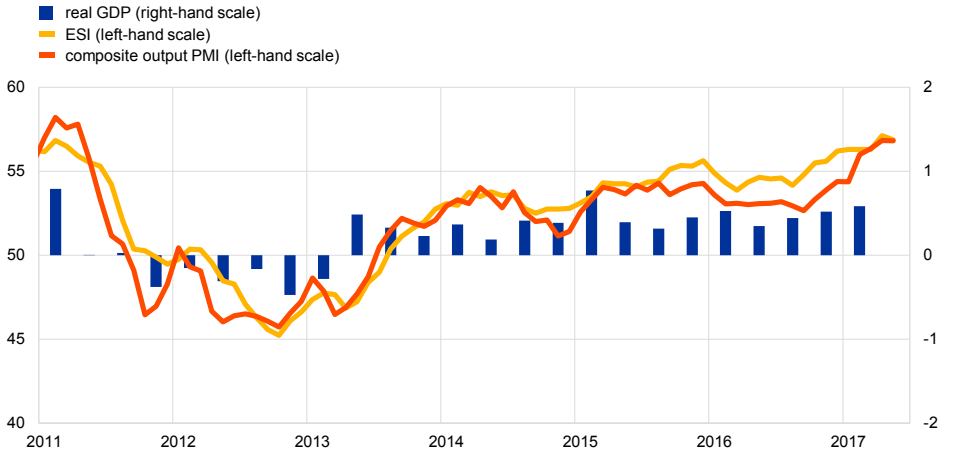
Overall, incoming data point to solid growth in the second quarter of 2017. The European Commission's Economic Sentiment Indicator (ESI) and the composite output Purchasing Managers' Index (PMI) displayed broad-based improvements in the first four months of the year. In May, both indicators stood at, or close to, their post-crisis peak, albeit having fallen back somewhat compared to April. The rise in the indicators in the first two months of the second quarter of 2017 mainly reflected

improved expectations of future production and order book levels, and both indicators are currently above their long-term averages (see Chart 14).

Chart 14

Euro area real GDP, the composite output PMI and the ESI

(quarter-on-quarter percentage changes, normalised percentage balances and diffusion indices)



Sources: Markit, European Commission and Eurostat.
Note: The latest observations are for the first quarter of 2017 for real GDP and May 2017 for the ESI and the PMI.

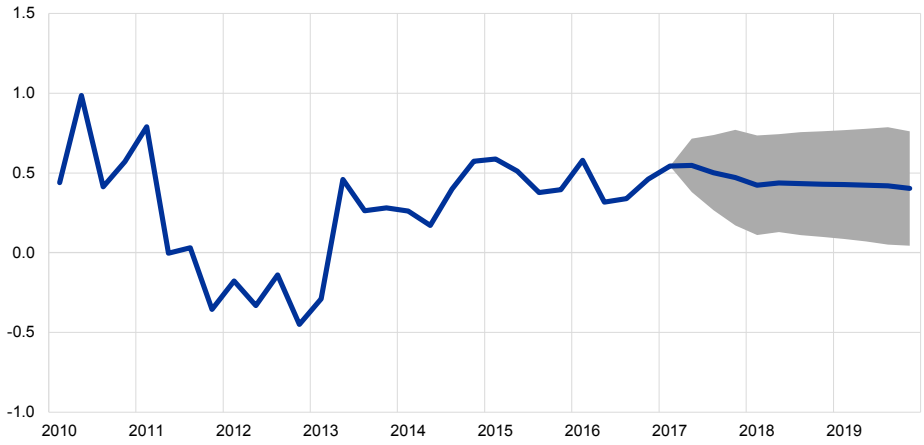
The current euro area economic expansion is expected to continue, supported by the ECB's monetary policy measures, which are being passed through to the real economy. Domestic demand is expected to be buoyed by a number of favourable factors. Very favourable financing conditions and low interest rates continue to promote a recovery in investment in the context of rising profits and lower deleveraging needs. Private consumption growth should benefit from a further improvement in labour market conditions, in part due to past labour market reforms. Tailwinds from the cyclical recovery outside the euro area, which are expected to strengthen, will support exports. However, economic growth in the euro area is expected to be dampened by the sluggish pace of implementation of structural reforms and outstanding balance sheet adjustments in a number of sectors, notwithstanding ongoing improvements.

The June 2017 Eurosystem staff macroeconomic projections for the euro area foresee annual real GDP increasing by 1.9% in 2017, 1.8% in 2018 and 1.7% in 2019 (see Chart 15). Compared with the March 2017 ECB staff macroeconomic projections, the outlook for real GDP growth has been revised upwards. The risks surrounding the euro area growth outlook are broadly balanced. On one hand, the current positive cyclical momentum increases the chances of a stronger than expected economic upswing. On the other hand, downside risks relating to predominantly global factors continue to exist (see the box entitled "The recent evolution of global risks – an assessment" in this issue of the Economic Bulletin).

Chart 15

Euro area real GDP (including projections)

(quarter-on-quarter percentage changes)



Sources: Eurostat and the article entitled "June 2017 Eurosystem staff macroeconomic projections for the euro area", published on the ECB's website on 8 June 2017.
Notes: The ranges shown around the central projections are based on the differences between actual outcomes and previous projections carried out over a number of years. The width of the ranges is twice the average absolute value of these differences. The method used for calculating the ranges, involving a correction for exceptional events, is documented in *New procedure for constructing Eurosystem and ECB staff projection ranges*, ECB, December 2009, available on the ECB's website.

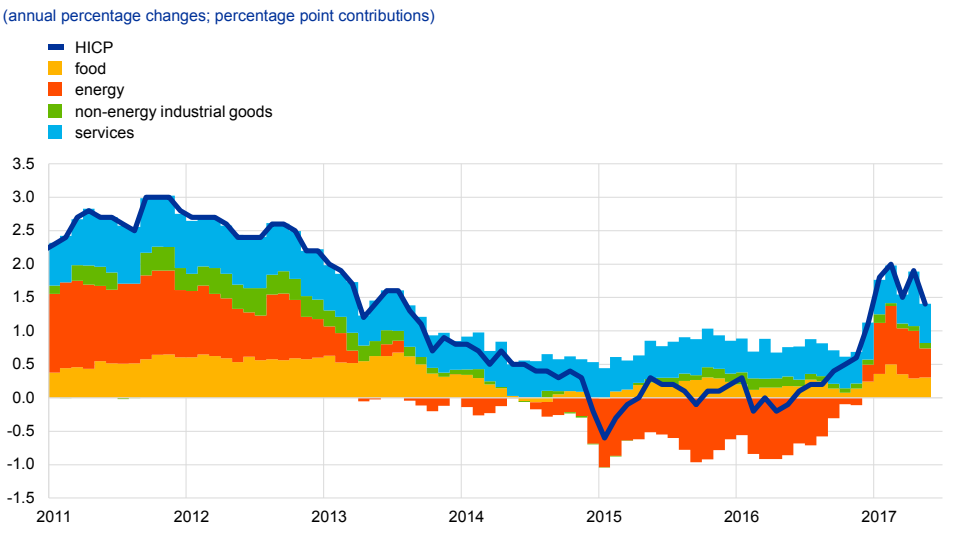
4 Prices and costs

According to Eurostat's flash estimate, euro area annual HICP inflation in May 2017 was 1.4%, down from 1.9% in April. Looking ahead, on the basis of current oil futures prices, headline inflation is likely to fluctuate around current levels in the coming months. Looking through recent volatility, underlying inflation has yet to show convincing signs of a pick-up and is expected to rise only gradually over the medium term. The June 2017 Eurosystem staff macroeconomic projections for the euro area foresee annual HICP inflation at 1.5% in 2017, 1.3% in 2018 and 1.6% in 2019.

Headline inflation fell in May. Recent movements in oil prices and the timing of Easter have meant that headline inflation has been quite volatile in recent months. According to Eurostat's flash estimate, it was 1.4% in May 2017, after 1.9% in April and 1.5% in March. The decrease in May was anticipated for two main reasons. First, services price inflation fell sharply, unwinding the strong pick-up in April, owing to the impact on the year-on-year change of the different timing of Easter in 2017 compared with 2016. Second, energy price inflation declined on account of a downward base effect associated with the sharp increase in energy prices one year earlier and the additional downward pressure stemming from the drop in oil prices in recent months.

Chart 16

Contributions of components to euro area headline HICP inflation



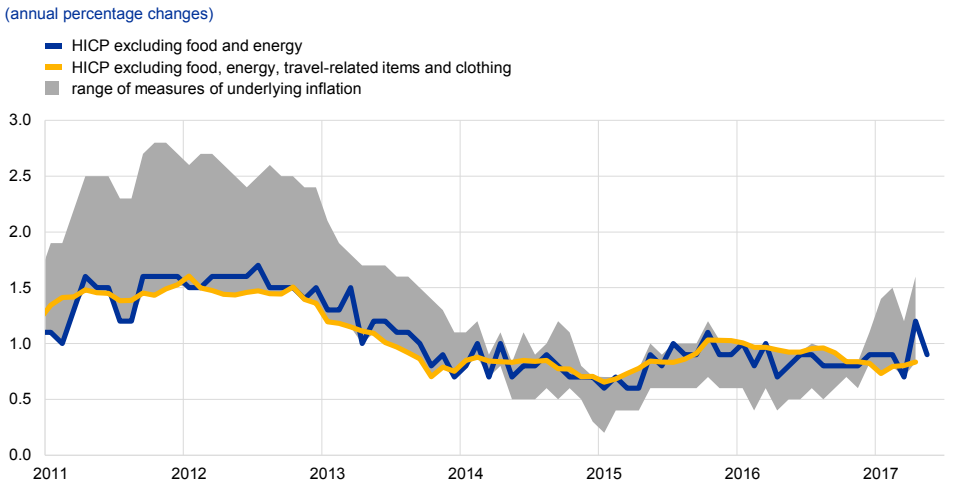
Sources: Eurostat and ECB calculations.
Note: The latest observations are for May 2017 (flash estimates).

Underlying inflation has yet to show robust signs of an upward adjustment. Some measures of underlying inflation have been skewed in recent months, owing to temporary factors such as the timing of Easter and the impact of recent oil price fluctuations on the travel-related components of services price inflation (particularly package holidays). Against this background, Eurostat's flash estimate for May suggests that HICP inflation excluding food and energy stood at 0.9%, after 1.2% in April and 0.7% in March, while HICP inflation excluding food, energy, travel-related items and clothing remained broadly stable in April. The ongoing subdued level of

underlying inflation may reflect, in part, the lagged downward indirect effects of past low oil prices, but also, more fundamentally, continued weak domestic cost pressures. As movements in underlying inflation are more closely linked to medium-term inflation trends, convincing signs of an upward adjustment are essential for a sustained adjustment in headline inflation.

Chart 17

Measures of underlying inflation



Sources: Eurostat and ECB calculations.
Notes: The range of measures of underlying inflation comprises the following: HICP excluding energy; HICP excluding unprocessed food and energy; HICP excluding food and energy; HICP excluding food, energy, travel-related items and clothing; the 10% trimmed mean; the 30% trimmed mean; the median of the HICP; and a measure based on a dynamic factor model. The latest observations are for May 2017 (HICP excluding food and energy – flash estimate) and April 2017 (all other measures).

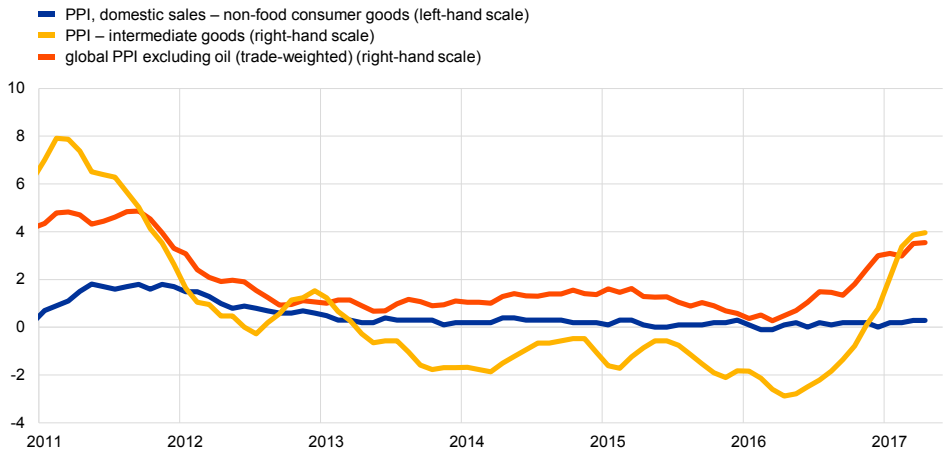
There has been a build-up of pipeline pressures at the early stages of the production and pricing chain. The pass-through of the strong pick-up in intermediate goods producer prices to non-food consumer goods producer prices still appears to be weak (see Chart 18). Reflecting the robust rebound in global non-energy producer price inflation that started in mid-2016, annual inflation in intermediate goods producer prices in the euro area continues to gather strength, rising from a low of -2.9% in April 2016 to stand at 4% in April 2017. On the basis of historical regularities, a sustained improvement in intermediate goods producer prices would already imply some recovery in non-food consumer goods price inflation.[2] However, despite the increase in intermediate goods producer prices and the further increase in import prices of non-food consumer goods, which rose from 0.1% in January 2017 to 1.1% in April, annual inflation in non-food consumer goods producer prices remains subdued and stood at 0.3% in March and April. One possible reason for the weak inflation in the Producer Price Index (PPI) despite increasing price pressures at the earlier stages of the production and pricing chain is that margins are being squeezed.

2 See also the discussion in the box entitled "What can recent developments in producer prices tell us about pipeline pressures?", *Economic Bulletin*, Issue 3, ECB, 2017.

Chart 18

Global, intermediate and domestic producer prices

(annual percentage changes)



Sources: Eurostat and ECB calculations.
Note: The latest observations are for April 2017.

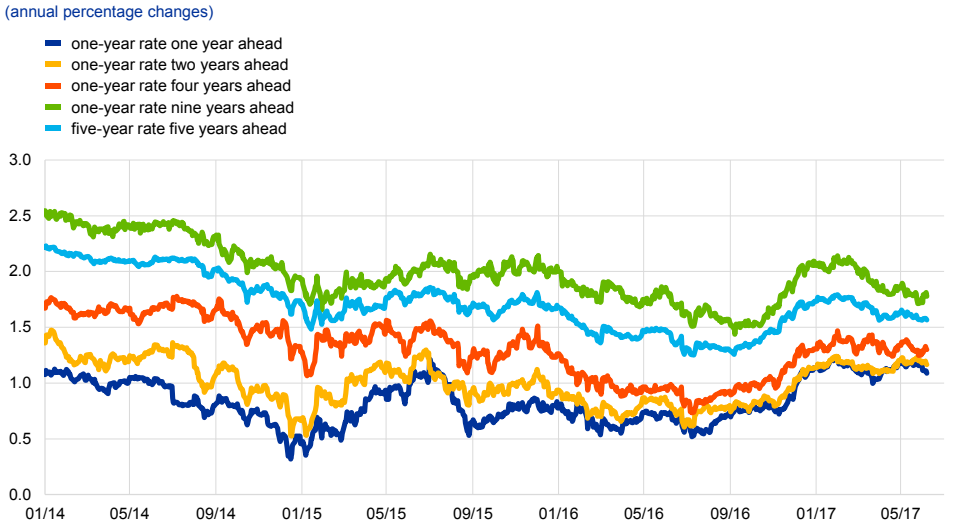
Euro area wage growth remains low. Annual growth in compensation per employee as well as growth in compensation per hour worked increased somewhat towards the end of 2016. The latest information on annual growth in negotiated wages in the euro area (1.4% in the first quarter of 2017, slightly down from 1.5% in the fourth quarter of 2016) does not point to additional upward pressure at the start of 2017. Overall, wage growth remains low compared with historical averages. This may be attributable to labour market slack – which is still significant according to broader measures of labour market underutilisation[3] – as well as low inflation, weak productivity growth and the ongoing effects of the labour market reforms implemented in some countries during the financial crisis.

Market-based measures of longer-term inflation expectations have declined somewhat, while survey-based measures have remained stable. Market-based measures have declined across all maturities (see Chart 19). The five-year forward inflation rate five years ahead stood at 1.57% on 7 June 2017, slightly below the level observed at the end of April. By contrast, survey-based measures of longer-term inflation expectations for the euro area, as reported in the ECB Survey of Professional Forecasters for the second quarter of 2017, remained unchanged at 1.8%.

[3] See the box entitled “Assessing labour market slack”, *Economic Bulletin*, Issue 3, ECB, 2017.

Chart 19

Market-based measures of inflation expectations



Sources: Thomson Reuters and ECB calculations.
Note: The latest observations are for 7 June 2017.

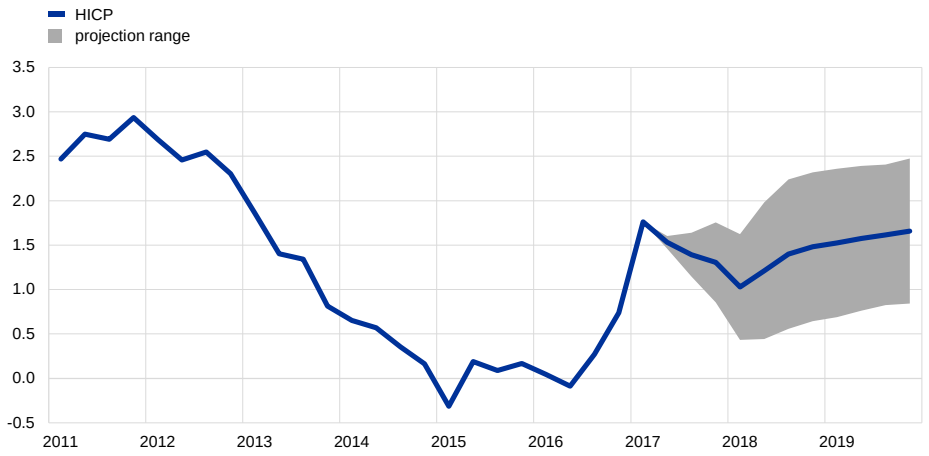
Looking ahead, the increase in HICP inflation in the euro area is expected to be somewhat lower than previously expected. On the basis of the information available in mid-May, the June 2017 Eurosystem staff macroeconomic projections for the euro area foresee HICP inflation to increase from 0.2% in 2016 to 1.5% in 2017, 1.3% in 2018 and 1.6% in 2019 (see Chart 20).[4] The V-shaped profile of headline inflation over the projection horizon results mainly from a strong positive contribution of HICP energy inflation in 2017, which decreases substantially in 2018. By comparison with the March 2017 ECB staff macroeconomic projections, the outlook for headline HICP inflation has been revised downwards by 0.3 percentage point in 2017 and 2018 and by 0.1 percentage point in 2019. This downward revision mainly reflects lower oil prices.

[4] See the article entitled "*June 2017 Eurosystem staff macroeconomic projections for the euro area*", published on the ECB's website on 8 June 2017.

Chart 20

Euro area HICP inflation (including projections)

(annual percentage changes)



Sources: Eurostat and the article entitled "*June 2017 Eurosystem staff macroeconomic projections for the euro area*", published on the ECB's website on 8 June 2017.

HICP inflation excluding energy and food is expected to rise only gradually over the medium term. HICP inflation excluding energy and food is projected to increase from 0.9% in 2016 to 1.1% in 2017 and to 1.4% and 1.7% in 2018 and 2019 respectively. One of the main factors behind this gradual pick-up is the envisaged increase in wages and unit labour costs as the recovery progresses and consolidates. Declining labour market slack and a gradual fading of crisis-related factors, which have dampened wage growth over the past few years, are expected to lead to a rebound in growth in compensation per employee and, given a more modest projected recovery in productivity, in unit labour cost growth. The rebound in oil prices since early 2016 is also expected to add, indirectly, somewhat to these upward cost pressures via higher production costs and their repercussions on nominal wages.

5 Money and credit

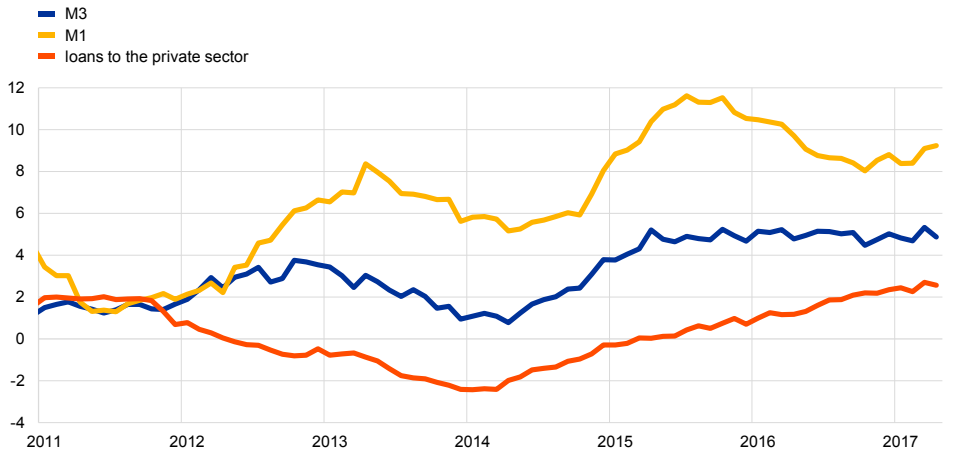
Broad money growth continues to expand at a robust pace, while the recovery in loan growth to the private sector observed since the beginning of 2014 is proceeding. The annual flow of total external financing to non-financial corporations is estimated to have strengthened further in the first quarter of 2017.

Growth in broad money remained robust in the first quarter of 2017 and in April, continuing the pace that has been observed since mid-2015. The annual growth rate of M3 stood at 4.9% in April (see Chart 21). The low opportunity cost of holding the most liquid instruments in an environment of very low interest rates, as well as the impact of the ECB's monetary policy measures, continued to support money growth. As in previous months, annual growth in M3 was mainly supported by its most liquid components; annual M1 growth expanded at an annual rate of 9.2% in April (up from 8.8% in December 2016).

Chart 21

M3, M1 and loans to the private sector

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



Source: ECB.
Notes: Loans are adjusted for loan sales, securitisation and notional cash pooling. The latest observation is for April 2017.

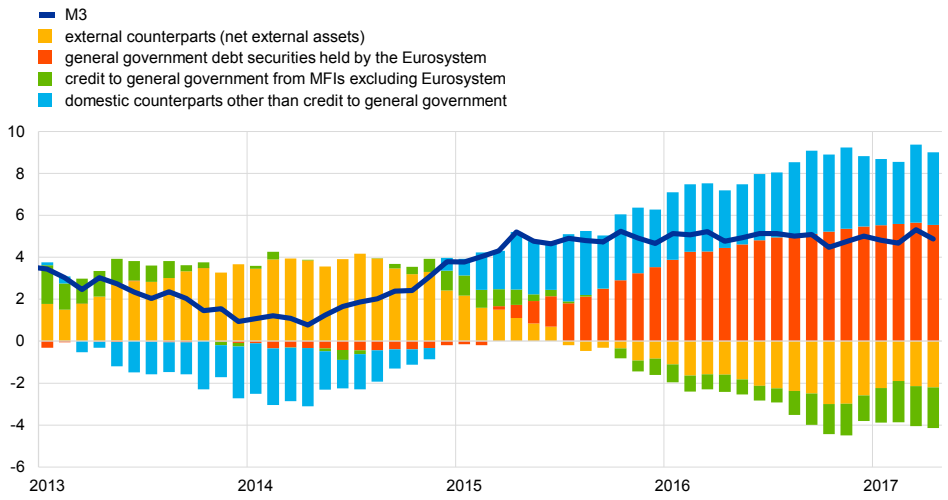
Overnight deposits continued to be the main driver of M3 growth. Specifically, the annual growth rate of overnight deposits held by households and non-financial corporations (NFCs) remained strong in the first quarter of 2017 and in April 2017, to stand at 11.4% and 10.6% respectively. The volatile annual growth rate of overnight deposits held by financial intermediaries (excluding MFIs) increased in March and April. The annual growth rate of currency in circulation increased slightly, without indicating a general tendency by the money-holding sector to substitute deposits with cash in an environment of very low or negative interest rates. Short-term deposits other than overnight deposits (i.e. M2 minus M1) continued to have a negative impact on M3 in the first quarter and in April. The growth rate of marketable instruments (i.e. M3 minus M2) – a small component of M3 – was strong in the first quarter of 2017, supported mainly by solid growth in money market fund shares/units, but became more moderate in April.

Domestic sources of money creation remained the main driver of broad money growth when viewed from the perspective of M3 counterparts (see Chart 22). Among the M3 counterparts, the Eurosystem's purchases of general government debt securities (see the red portion of the bars in Chart 22), mainly in the context of the ECB's public sector purchase programme (PSPP), contributed positively to M3 growth. In addition, M3 growth continued to be supported by domestic counterparts other than credit to general government (see the blue portion of the bars in Chart 22). This was driven by the ongoing recovery in credit to the private sector, together with the persistent contraction in MFIs' longer-term financial liabilities. These longer-term financial liabilities (excluding capital and reserves), whose annual rate of change has been negative since the second quarter of 2012, decreased further in the first quarter of 2017 and in April. The negative annual growth rate was partly due to the impact of the ECB's targeted longer-term refinancing operations (TLTRO-II), which may be acting as a substitute for longer-term market-based bank funding and reducing the attractiveness for investors of holding long-term deposits and bank bonds. At the same time, government bond sales from euro area MFIs excluding the Eurosystem contributed to the negative annual growth of credit to general government by MFIs excluding the Eurosystem and dampened M3 growth (see the green portion of the bars in Chart 22).

Chart 22

M3 and its counterparts

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



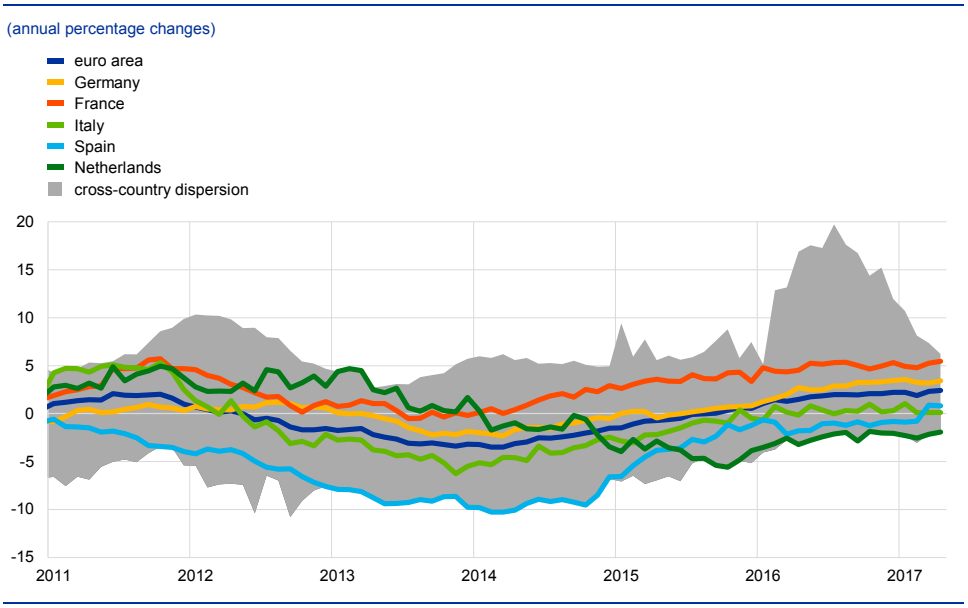
Source: ECB.
Note: The latest observation is for April 2017.

MFIs' net external assets continued to exert downward pressure on annual M3 growth. They registered a small negative monthly outflow in the first quarter of 2017 and in April. This somewhat increased the downward pressure they exerted on annual M3 growth (see the yellow portion of the bars in Chart 22). This development reflects continuing capital outflows from the euro area. PSPP-related sales of euro area government bonds by non-residents appear to be a factor contributing to this trend (see also the box entitled "Which sectors sold the government securities purchased by the Eurosystem?").

The recovery in loan growth to the private sector observed since the beginning of 2014 is proceeding. The annual growth rate of MFI loans to the private sector (adjusted for loan sales, securitisation and notional cash pooling) increased in the first quarter of 2017 and in April (see Chart 21). Across sectors, the annual growth in loans to NFCs increased further, standing at 2.4% in April (see Chart 23). Overall, growth in loans to NFCs has recovered significantly from the trough in the first quarter of 2014. This development is broad-based across the largest countries, although loan growth rates are still negative in some jurisdictions. The annual growth rate of loans to households increased in the first quarter of 2017 and remained unchanged at 2.4% in April (see Chart 24). The significant decrease in bank lending rates seen across the euro area since summer 2014 (owing notably to the ECB's non-standard monetary policy measures) and overall improvements in the supply of, and demand for, bank loans have supported these trends. 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 bank lending.

Chart 23

MFI loans to NFCs in selected euro area countries

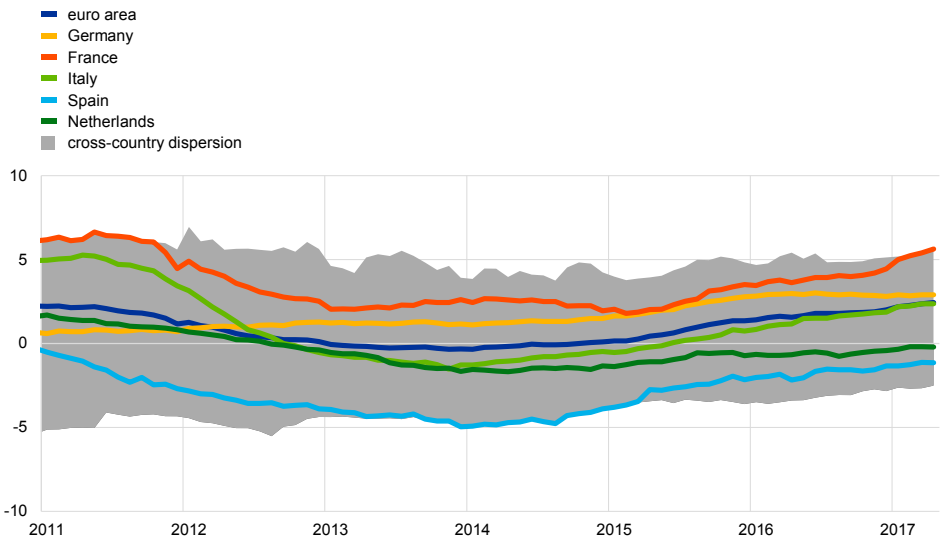


Source: ECB.
Notes: Adjusted for loan sales, securitisation and notional cash pooling. The cross-country dispersion is calculated on the basis of minimum and maximum values using a fixed sample of 12 euro area countries. The latest observation is for April 2017.

Chart 24

MFI loans to households in selected euro area countries

(annual percentage changes)



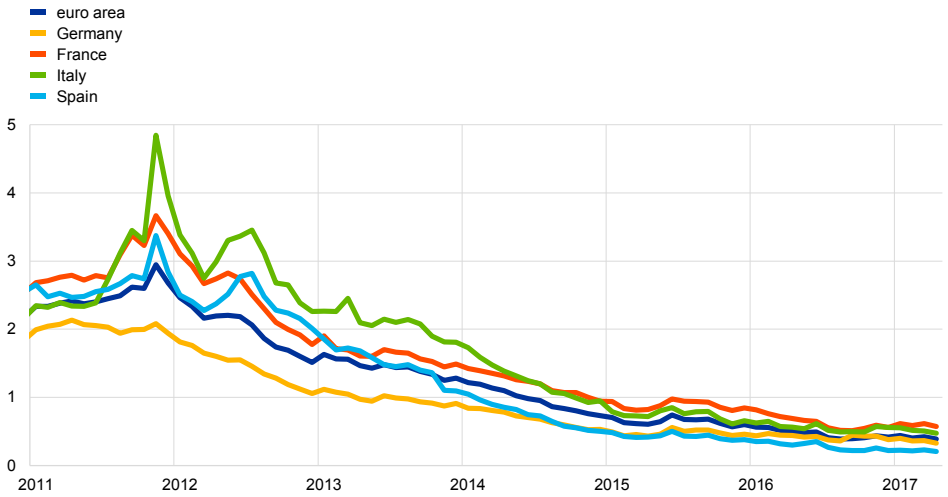
Source: ECB.
Notes: Adjusted for loan sales, securitisation and notional cash pooling. The cross-country dispersion is calculated on the basis of minimum and maximum values using a fixed sample of 12 euro area countries. The latest observation is for April 2017.

Banks' funding conditions remained favourable. Banks' composite cost of debt financing decreased slightly in the first quarter of 2017 and in April (see Chart 25). This was driven by a reduction in bank bond yields, while the cost of deposits remained stable. Banks' composite cost of debt financing continues to stand at historically low levels. The ECB's accommodative monetary policy stance, the net redemption of MFIs' longer-term financial liabilities, the strengthening of bank balance sheets and the receding fragmentation across financial markets have all contributed to these favourable conditions.

Chart 25

Banks' composite cost of debt financing

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



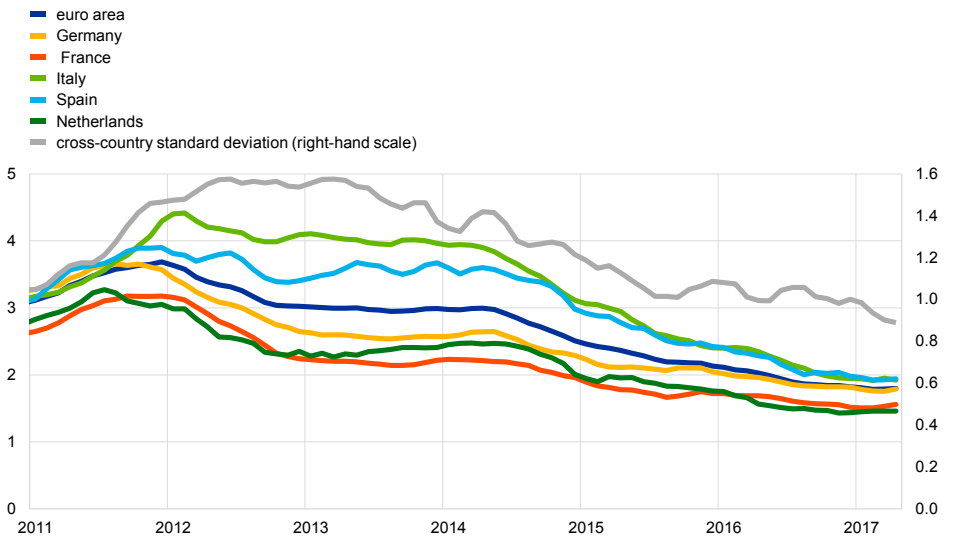
Sources: ECB, Merrill Lynch Global Index and ECB calculations.
Notes: The composite cost of deposits is calculated as an average of new business rates on overnight deposits, deposits with an agreed maturity and deposits redeemable at notice, weighted by their corresponding outstanding amounts. The latest observation is for April 2017.

Bank lending rates for NFCs and households increased somewhat, but nevertheless remained at very low levels in the first quarter of 2017 and in April (see Charts 26 and 27). The decline in lending rates, which started in early 2014, flattened at the beginning of 2017 and rates have since remained close to their historical lows. The composite bank lending rate for loans to NFCs increased slightly in the first quarter of 2017 and remained broadly stable in April. At the same time, the composite bank lending rate for loans to households for house purchase increased somewhat. Since the announcement of the ECB's credit easing measures in June 2014, composite bank lending rates for loans to NFCs and households have decreased by significantly more than market reference rates, signalling an improvement in the pass-through of monetary policy measures to bank lending rates. The decrease in banks' composite funding costs has supported the decline in composite lending rates. Between May 2014 and April 2017, composite lending rates on loans to NFCs and households fell by around 112 basis points and 104 basis points, respectively. The reduction in bank lending rates on NFC loans was particularly strong in vulnerable countries, thereby contributing to mitigating previous asymmetries in monetary policy transmission across countries. Over the same period, the spread between interest rates charged on very small loans (loans of up to €0.25 million) and those charged on large loans (loans of above €1 million) in the euro area narrowed considerably and fell to a new historical low in April 2017. This indicates that small and medium-sized enterprises have generally been benefiting to a greater extent from the decline in bank lending rates than large companies.

Chart 26

Composite lending rates for NFCs

(percentages per annum; three-month moving averages)

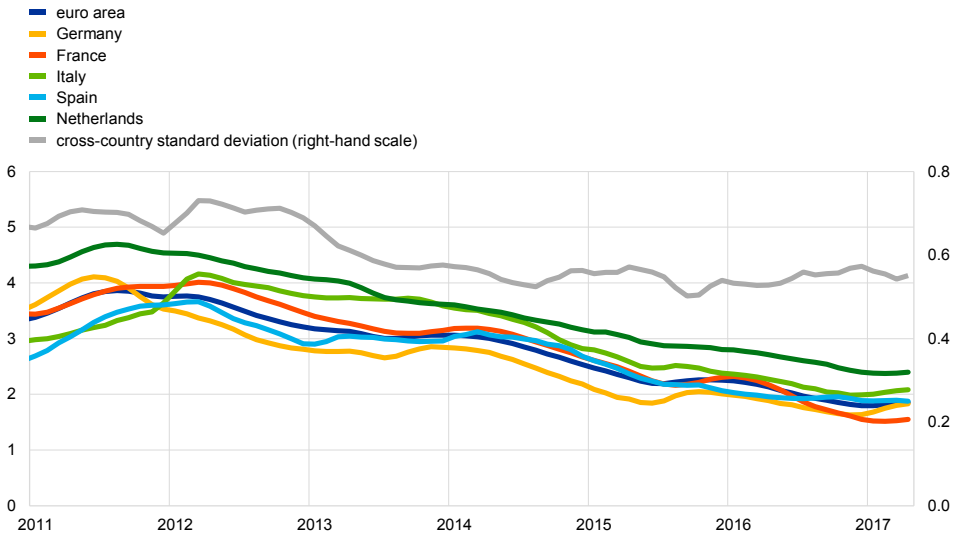


Source: ECB.
Notes: The indicator for the total cost of bank borrowing is calculated by aggregating short and long-term rates using a 24-month moving average of new business volumes. The cross-country standard deviation is calculated using a fixed sample of 12 euro area countries. The latest observation is for April 2017.

Chart 27

Composite lending rates for house purchase

(percentages per annum; three-month moving averages)



Source: ECB.
Notes: The indicator for the total cost of bank borrowing is calculated by aggregating short and long-term rates using a 24-month moving average of new business volumes. The cross-country standard deviation is calculated using a fixed sample of 12 euro area countries. The latest observation is for April 2017.

The annual flow of total external financing to euro area NFCs is estimated to have strengthened further in the first quarter of 2017. This strengthening reflects continued improvements in bank lending dynamics and robust debt securities issuance. NFCs' external financing now stands at levels seen at the beginning of 2005 (just before the period of excessive credit growth started). Although the sectoral

accounts data show that net issuance of listed shares by NFCs increased markedly in the fourth quarter of 2016, this was due to the completion of a single large merger. Without that merger net issuance would have been negative over the quarter as a result of significant volumes of share buybacks. Non-MFI loans to NFCs also recorded a second consecutive marked quarterly net redemption in the fourth quarter of 2016, reflecting the winding down of one large special purpose entity and continued repayments of debt securities issued by others. Overall, the recovery in NFCs' external financing observed since early 2014 has been supported by the strengthening of economic activity, further declines in the cost of debt financing, the easing of bank lending conditions and larger numbers of mergers and acquisitions. At the same time, NFCs' record high cash holdings (which are increasing) have reduced the need for external financing.

Net issuance of debt securities by NFCs became more moderate in April and May 2017, after remaining robust in March. Issuance activity continued to be supported by the ECB's corporate bond purchases, among other factors. Net issuance of listed shares by NFCs in the first months of 2017 has been modest.

Financing costs for NFCs remain very favourable. The overall nominal cost of external financing for NFCs is estimated to have somewhat increased, on average, in the last two months, to stand in May 2017 at 15 basis points above its historical low in July 2016. This recent rise in the overall cost of financing is explained by a modest increase in the cost of equity, attributable to higher equity risk premia. By contrast, the cost of debt has remained practically unchanged at historical lows since August 2016.

According to the latest round of the Survey on the Access to Finance of Enterprises in the euro area – October 2016 to March 2017, SMEs continued to signal further improvements in the availability of external finance. For the first time since the survey began, SMEs reported that they view the general economic outlook as conducive to the availability of external finance. They again ranked access to finance as their least important problem, although significant cross-country differences remain. On balance, SMEs in the euro area reported improvements in their turnover and debt situation, along with stable profits and rising labour and other costs.

6 Fiscal developments

The euro area budget deficit is projected to fall further over the projection horizon (2017-19), mainly as a result of improving cyclical conditions and decreasing interest payments. The aggregate fiscal stance for the euro area is projected to be broadly neutral over the period 2017-19. The euro area government debt-to-GDP ratio, although still high, will continue to decline. However, countries with high levels of public debt would benefit from additional consolidation efforts to set their debt-to-GDP ratio firmly on a downward path.

The euro area general government budget deficit is projected to decline further over the projection horizon. Based on the June 2017 Eurosystem staff macroeconomic projections[5], the general government deficit ratio for the euro area is expected to fall from 1.5% of GDP in 2016 to 1.0% of GDP in 2019 (see the table). The improvement in the fiscal outlook, which is broadly unchanged from the March 2017 projections, is supported mainly by favourable cyclical conditions and declining interest payments, while structural fiscal policy measures are expected to be limited. For a significant majority of euro area countries the projections are less optimistic than those outlined in the respective 2017 stability programme updates, in particular as they relate to the period towards the end of the projection horizon. One reason for this difference is that the stability programme updates include fiscal measures that are either not yet legislated for, or not sufficiently specified to be considered in the projections.

Table

Fiscal developments in the euro area

(percentages of GDP)

	2014	2015	2016	2017	2018	2019
a. Total revenue	46.7	46.4	46.3	46.1	45.9	45.9
b. Total expenditure	49.3	48.5	47.8	47.5	47.1	46.8
of which:						
c. Interest expenditure	2.7	2.4	2.2	2.0	1.9	1.9
d. Primary expenditure (b - c)	46.6	46.1	45.6	45.4	45.2	45.0
Budget balance (a - b)	-2.6	-2.1	-1.5	-1.3	-1.2	-1.0
Primary budget balance (a - d)	0.1	0.3	0.7	0.7	0.7	0.9
Cyclically adjusted budget balance	-1.9	-1.7	-1.5	-1.4	-1.4	-1.2
Structural primary balance	1.0	0.8	0.6	0.6	0.5	0.6
Gross debt	92.0	90.3	89.2	87.9	86.4	84.7
Memo item: real GDP (percentage changes)	1.2	1.9	1.7	1.9	1.8	1.7

Sources: Eurostat, ECB and June 2017 Eurosystem staff macroeconomic projections.
Notes: The data refer to the aggregate general government sector of the euro area. Owing to rounding, figures may not add up. As the projections usually take the most recent data revisions into account, there might be discrepancies compared with the latest validated Eurostat data.

[5] See the June 2017 Eurosystem staff macroeconomic projections for the euro area.

The euro area fiscal stance is projected to be broadly neutral in 2017-19.[6] The stable outlook of the structural primary balance is almost unchanged from the March 2017 exercise. On the revenue side, small cuts in direct taxes in some countries are offset by other revenue factors (mainly reflecting a change in the statistical recording of the universal mobile telecommunications system (UMTS) proceeds). On the expenditure side, government investment and social payments are projected to grow slightly above the nominal GDP trend.

Euro area government debt is expected to continue to decline from its current high level. The euro area government debt-to-GDP ratio, which peaked in 2014, is projected to decline further from 89.2% in 2016 to 84.7% by the end of 2019. The projected reduction in government debt is supported mainly by favourable developments in the interest rate-growth differential, in the light of a robust macroeconomic outlook and low interest rates. The expected primary surpluses will be contributing to the decline in the government debt-to-GDP ratio, while the deficit-debt adjustments are expected to have a small debt-increasing impact. Compared with the March 2017 projections, the aggregate debt-to-GDP ratio for the euro area is expected to be broadly unchanged, except for a marginally better outlook at the end of the projection horizon. In the majority of euro area countries the debt-to-GDP ratio is projected to decline, while in a few countries it is expected to increase.

Countries need to continue with their fiscal efforts in full compliance with the Stability and Growth Pact. Particularly in the case of the high-debt countries, further consolidation efforts are essential to set the public debt-to-GDP ratio firmly on a downward path; their high debt levels make these countries particularly vulnerable to any renewed financial market instability or a rapid rebound in interest rates. On 16 May 2017 the European Commission issued its proposals for the annual country-specific recommendations (CSRs), setting out guidance on the EU countries' economic and fiscal policies, which eventually will be adopted by the Council. For an assessment of the fiscal policy-related CSRs, see the box entitled "Country-specific recommendations for fiscal policies under the 2017 European Semester" in this issue of the Economic Bulletin.

Further progress is needed with respect to the EU fiscal governance framework. In particular, the fiscal compact, if fully transposed into national legislation and implemented, should strengthen fiscal discipline and increase ownership of the fiscal governance framework at the national level. However, as argued in the box entitled "Fiscal compact: the Commission's review and the way forward", it seems that in some countries the fiscal compact has only partially been transposed into national legislation. Looking further ahead, the European Commission has contributed to the discussion on the future of Europe with its "Reflection paper on the deepening of the economic and monetary union", published

6 The fiscal stance reflects the direction and size of the stimulus from fiscal policies on the economy, beyond the automatic reaction of public finances to the business cycle. It is measured as the change in the structural primary balance, i.e. the cyclically adjusted primary balance ratio net of temporary measures, such as government support for the financial sector. For more details on the concept of the euro area fiscal stance, see the article entitled "The euro area fiscal stance", *Economic Bulletin*, Issue 4, ECB, June 2016.

on 31 May 2017, which includes, inter alia, proposals on how to progress towards a fiscal union.[7]

[7] See the Reflection paper on the deepening of the economic and monetary union.

Boxes

1 The recent evolution of global risks – an assessment

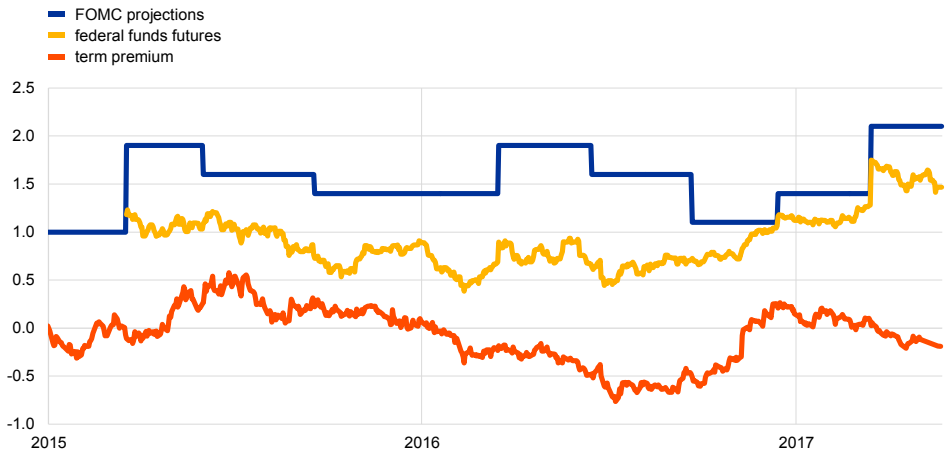
This box provides a qualitative assessment of how key global risks have evolved since early 2016.

Risks of an abrupt shift in global financial conditions appear to have eased but not disappeared. Since the "taper tantrum" episode in 2013, when expectations regarding US monetary policy shifted abruptly, a combination of careful communication and a very gradual approach to monetary tightening by the US Federal Reserve System appears to have mitigated such risks somewhat. In particular, the gap between market expectations and Federal Open Market Committee (FOMC) projections regarding interest rates has narrowed (see Chart A), suggesting that the prospect of monetary policy surprises has diminished. However, uncertainty about the tightening cycle in the United States remains and, despite the modest rebound in the term premium since mid-2016, longer-term interest rates remain very low.

Chart A

US federal funds rates compared with FOMC projections

(projections for the end of the next calendar year; percentages)



Source: ECB staff calculations based on data from Bloomberg and the Federal Reserve Board.
Notes: The latest observation is for 23 May 2017 for federal funds futures and 15 March 2017 for FOMC projections. The term premium is the Federal Reserve Bank of New York's estimate based on ten-year Treasury yields.

At the same time major emerging market economies (EMEs) seem better placed than some years ago to weather tighter external financing conditions. In recent years vulnerabilities and external imbalances in several EMEs have declined, with real interest rates increasing, inflation falling, credit growth slowing and current account imbalances declining. This should make them more resilient to adverse external financing shocks. Nonetheless, some EMEs – particularly those with large external debts – remain exposed to an abrupt tightening of global financial conditions. Accordingly, an abrupt reversal in global financial market sentiment

weighing on global activity, and particularly EME activity, continues to be a risk to the global outlook.

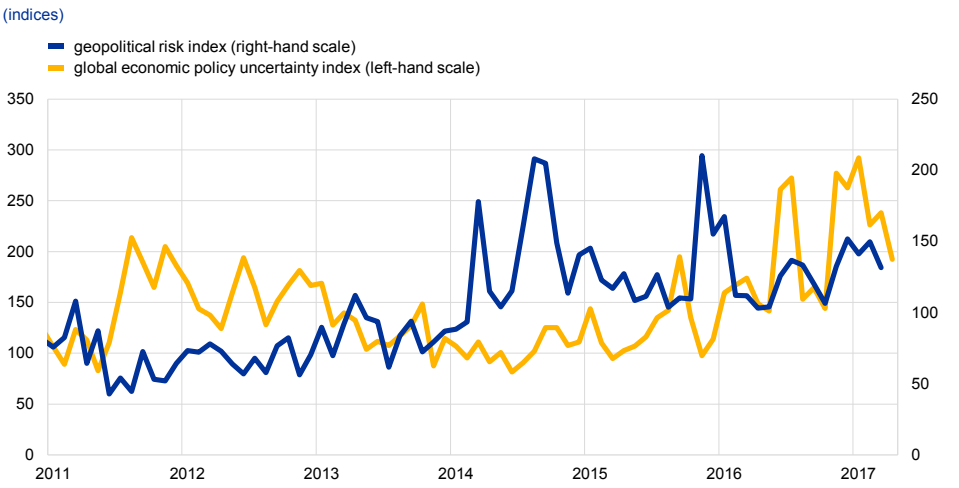
Policy support for growth has mitigated concerns about the short-term outlook for China. From mid-2015 concerns about the outlook for China were prominent amid fears over the sharp slowdown in activity, capital outflows and the depreciation of the renminbi, compounded by rising policy uncertainty. A robust policy response – including substantial fiscal support, infrastructure spending, looser financial conditions and tightened capital controls – alleviated such worries. By underscoring the authorities' determination to maintain growth close to targets, it may have helped to allay concerns about the near-term outlook. However, the policy response came with significant costs, including a further increase in leverage and increased resource misallocation (with stimulus again being concentrated on the state-owned sector). Tighter capital controls also helped to fuel a housing market boom, as funds were channelled towards domestic assets.

Policy uncertainty has increased at the global level, with concerns about more inward-looking policies, while geopolitical tensions remain elevated. Geopolitical tensions have been a key downside risk to growth in recent years, although their intensity and location have varied over time, ranging from the conflict in the Middle East and tensions with North Korea and in the South China Sea, to political tension between Turkey and the EU, and their impact on refugee flows towards the EU. Some of these risks are more local or regional in nature, while others have a more global dimension, and their probabilities and impacts are difficult to estimate. An index of geopolitical tensions, which captures incidents of war, political tension and terrorist attacks, shows a broadly stable level between early 2016 and the start of 2017.[8] Moreover, since the US election pressures for more inward-looking policies have risen. Overall, global policy uncertainty has trended upwards in recent years (see Chart B).

[8] Caldara, Dario and Iacoviello, Matteo, "Measuring Geopolitical Risk", Working Paper, Board of Governors of the Federal Reserve System, 2016.

Chart B

Global economic policy uncertainty and measures of geopolitical tension

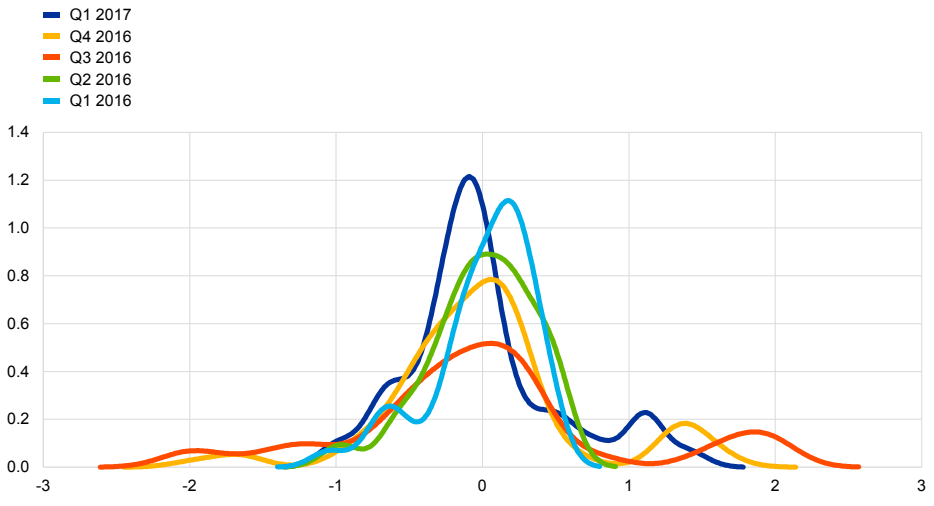


Sources: Haver, Federal Reserve Board and ECB staff calculations.
Notes: The global economic policy uncertainty index is a GDP-weighted average for 17 countries. The geopolitical risk index measures the incidence of wars, geopolitical tensions and terrorist attacks. The latest observation is for March 2017 for geopolitical risk and April 2017 for global economic policy uncertainty.

The medium-term risks of an adverse fall-out from Brexit persist. The immediate impact of the UK referendum on EU membership has been more benign than initially expected. Activity in the United Kingdom was relatively robust in 2016, although it moderated early this year as inflation rose following the pound sterling's depreciation. The dispersion of forecasts compiled by Consensus Economics has narrowed (see Chart C), although it remains wider than in the pre-referendum period. Nonetheless, medium-term risks persist, particularly related to the outcome of the negotiations on the conditions for leaving the EU and future trade.

Chart C

Dispersion of UK growth forecasts



Sources: Consensus Economics and ECB staff calculations.

In sum, the analysis suggests that existing downside risks to global growth may have declined over the past year, but have not disappeared. Moreover, new risks have emerged. On the one hand, careful communication by the Federal Reserve System, coupled with a very gradual course of monetary policy tightening and the decline in vulnerabilities in major EMEs, appears to have eased the risk of a disorderly tightening of global financial conditions. On the other hand, although policy actions to support activity have helped allay concerns about the near-term prospects for China, medium-term vulnerabilities remain elevated, given further increases in leverage. In addition, geopolitical tensions remain high. At the same time, new sources of risk have emerged – in particular, there is significant policy uncertainty surrounding the intentions of the new US Administration regarding fiscal and, especially, trade policies, the latter entailing potentially significant negative effects on the global economy. Moreover, the expected gradual recovery of the world economy is contingent on a number of important assumptions about policy, and it remains heavily reliant on ongoing monetary and fiscal policy support. Overall, therefore, although some risks appear to have diminished, the balance of risks to the global outlook remains tilted to the downside.

2 The ECB's corporate sector purchase programme: its implementation and impact

8 June 2017 marked the first anniversary of the start of the corporate sector purchase programme (CSPP)[9]. The CSPP is part of the Eurosystem's expanded asset purchase programme (APP) and was introduced with the aim of strengthening the pass-through of the Eurosystem's asset purchases to financing conditions of the real economy.

The universe of CSPP-eligible bonds is deliberately broad and its composition is primarily guided by monetary policy and risk management considerations. In pursuing its objective of maintaining price stability, the ECB is mandated to act in accordance with the principle of an open market economy with free competition, favouring an efficient allocation of resources. Consequently, the ECB aims for a market-neutral implementation of the APP, and therefore CSPP purchases are conducted according to a benchmark that reflects proportionally the market value of eligible bonds.[10]

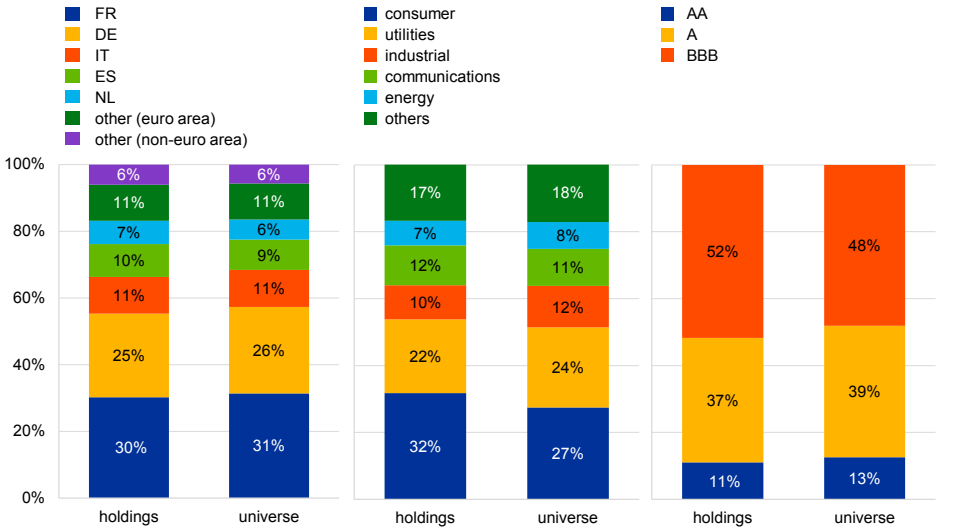
The composition of CSPP holdings generally mirrors that of the CSPP-eligible bond universe. CSPP holdings stood at €92 billion as at 7 June 2017, corresponding to around 11% of the CSPP-eligible bond universe. Holdings are well diversified over around 950 securities issued by around 200 issuer groups. The breakdown of CSPP holdings by country of risk follows that of the CSPP-eligible bond universe very closely (see Chart A). Nor are there any major deviations between CSPP holdings and their respective shares in the CSPP-eligible universe in terms of sectors of economic activity or rating groups. 12% of CSPP holdings were purchased at negative yields, but above the level of the deposit facility rate.

9 For an initial analysis of the impact of the CSPP, see the box entitled "The corporate bond market and the ECB's corporate sector purchase programme", *Economic Bulletin*, Issue 5, ECB, August 2016.

10 The ECB purchases securities issued by non-bank corporations incorporated in the euro area, in both the primary and the secondary markets. To be eligible for purchase, securities must be eligible as collateral for Eurosystem credit operations. For more details on the programme design and eligibility criteria, see Decision (EU) 2016/948 of the European Central Bank of 1 June 2016 on the implementation of the corporate sector purchase programme (ECB/2016/16) (OJ L 157, 15.6.2016, p. 28).

Chart A

Country, sector and rating classification of CSPP holdings and CSPP-eligible bond universe



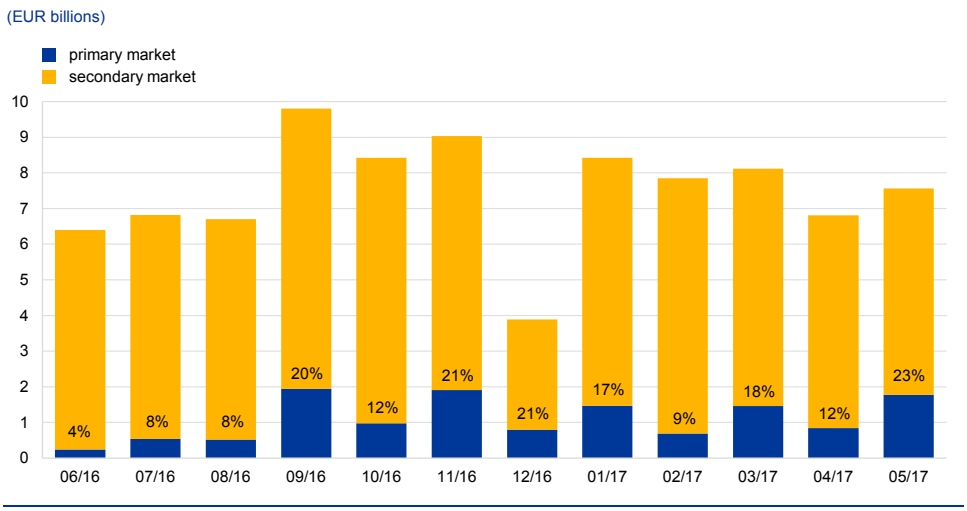
Sources: ECB, Bloomberg.
Notes: Bloomberg country of risk classification, sector classification and first-best ratings (broad categories) are used. The distribution is according to nominal values.

To ensure the effectiveness of monetary policy while maintaining a level playing field for all market participants and avoiding undue market distortions, there is no positive or negative discrimination in the CSPP-eligible bond universe on the basis of environmental or social criteria. While the ECB shares the view that an awareness of environmental issues, together with ethical and socially responsible behaviour, are important for society, it is nevertheless up to political decision-makers (in the first instance) to agree on, define and promote appropriate policies and measures. It is not, however, possible to embed these into a large-scale asset purchase programme that is carried out as a temporary monetary policy measure over a relatively short period of time. To do so would limit the effectiveness of the APP in its contribution to fulfilling the ECB's mandate of maintaining price stability. It is worth noting that a number of assets classified as "green bonds" are eligible for the CSPP and have also been purchased by the Eurosystem. The holdings of these bonds are broadly in line with their weightings in the benchmark.

The pace of purchases under the CSPP depends on prevailing market conditions. Monthly net purchases during the period from June 2016 to May 2017 (inclusive) have ranged between just below €4 billion and just below €10 billion (see Chart B). Purchases were particularly low ahead of the year-end, which is a period typically characterised by negligible bond issuance and low secondary market liquidity.

Chart B

CSPP monthly net purchases according to transaction method

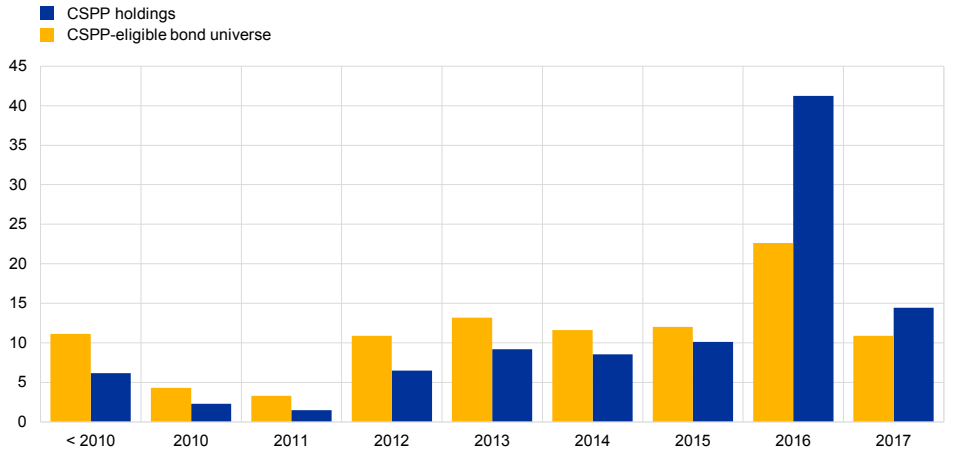


Sources: ECB, Bloomberg.
Note: The distribution is based on book values.

Purchases under the CSPP are made in both the primary and the secondary markets; since its inception 15% of CSPP holdings have been purchased in the primary market. Owing to these primary market purchases and to better liquidity in newly issued bonds, CSPP holdings tend to be skewed towards bonds issued more recently; more than half are in bonds issued in 2016 and 2017 (see Chart C). Investor demand for CSPP-eligible corporate bond issuances was, on average, around three times higher than the issued amount. Issuers generally treat the Eurosystem similarly to most other investors in terms of final allocations.

Chart C

CSPP holdings according to year of issuance



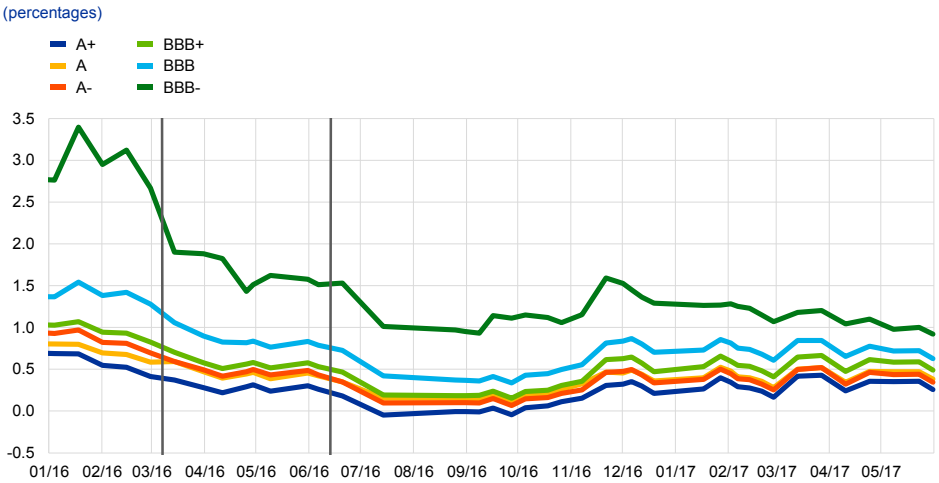
Sources: ECB, Bloomberg.
Note: The distribution is based on nominal values. Data for the year 2017 cover purchases of bonds settled during the period from 1 January until 7 June.

The corporate bond market has developed positively since the announcement of the CSPP in March 2016. The announcement had a measurable effect at the

time on secondary market pricing in the corporate bond market[11]. Euro area corporate bond yields continued to decline in the period following the announcement until the autumn of 2016 (see Chart D), when they again increased amid an expansion in the supply of new bonds and a rise in risk premia globally. Since the beginning of 2017, euro area corporate bond yields have declined overall amid relatively low volatility. Market liquidity conditions remain generally favourable for CSPP bond purchases by the Eurosystem.

Chart D

5-year yields on CSPP-eligible bonds according to rating classification



Sources: ECB, Bloomberg.
Notes: Bi-weekly data are used. The vertical lines mark the announcement of the CSPP on 10 March 2016 and the beginning of purchases under the CSPP on 8 June 2016. The 5-year constant maturity yields are based on estimated yield curves for portfolios of CSPP-eligible bonds using a first-best credit rating.

Risk premia in the CSPP-eligible bond market have been contained and have shown resilience to shocks. The credit premium has been in almost continuous decline since the CSPP announcement (see Chart E); according to feedback from market participants, this reflects (among other factors) investor appetite for bonds issued by lower-rated companies. Market participants also note that, as a consequence of the CSPP, investors are rebalancing their portfolios to favour more risky non-eligible assets or to adjust the geographical distribution to holdings outside the euro area. The term premium also declined throughout most of 2016, before increasing again in the fourth quarter of that year. According to market participants, some investors are becoming less willing to assume exposure to term risk in the corporate bond market, in anticipation of a possible global rise in interest rates. The liquidity premium has been on a slight downward trend since the start of the CSPP; this is a positive sign of a well-functioning market[12].

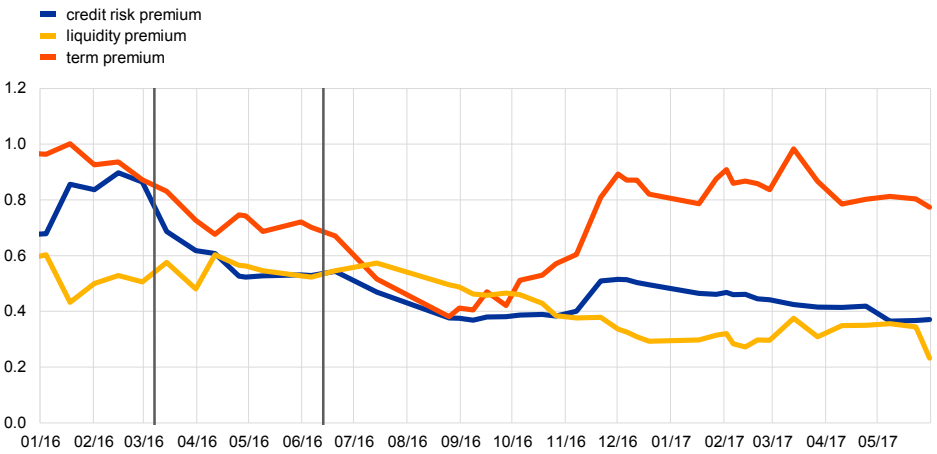
11 For an initial analysis of the impact of the CSPP, see the box entitled "The corporate bond market and the ECB's corporate sector purchase programme", *Economic Bulletin*, Issue 5, ECB, August 2016.

12 This compression took place even though CSPP purchases have been skewed towards bonds with larger amounts outstanding – which are typically more liquid than those with smaller amounts outstanding – and therefore more frequently offered to the Eurosystem.

Chart E

Pricing of credit, liquidity and term differences in the CSPP bond market

(percentages)



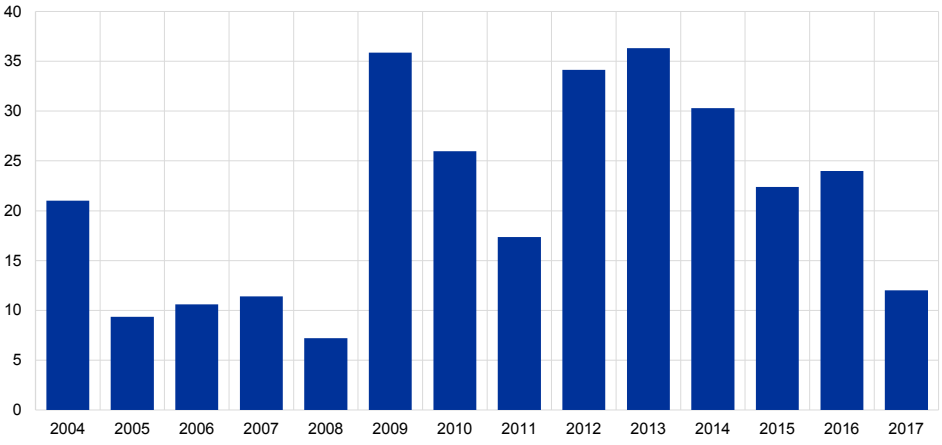
Source: ECB, Bloomberg.
Notes: Bi-weekly data are used. The vertical lines mark the announcement of the CSPP on 10 March 2016 and the beginning of purchases under the CSPP on 8 June 2016. The credit premium is proxied by the yield spread between 5-year A+ rated and BBB rated CSPP-eligible corporate bonds. The term premium is proxied by the average slope (7-year minus 2-year) of the yield curves for portfolios of CSPP-eligible A-, A and A+ rated corporate bonds. The liquidity premium is proxied by the difference between estimated 5-year yields on two portfolios of BBB+ rated CSPP-eligible corporate bonds: one containing bonds with amounts outstanding below €300 million and one with outstanding amounts above €500 million (the latter are considered in the euro area corporate bond market as benchmark bonds).

Financing conditions for corporations have improved. Market participants mention the CSPP as a factor that has supported the ability of companies to issue bonds and deepened the corporate bond market. However, the CSPP does not appear to have directly triggered an increase in issuance by new or infrequent euro area issuers (see Chart F).

Chart F

Bond issuance by infrequent euro area non-financial corporate bond issuers

(EUR billions)

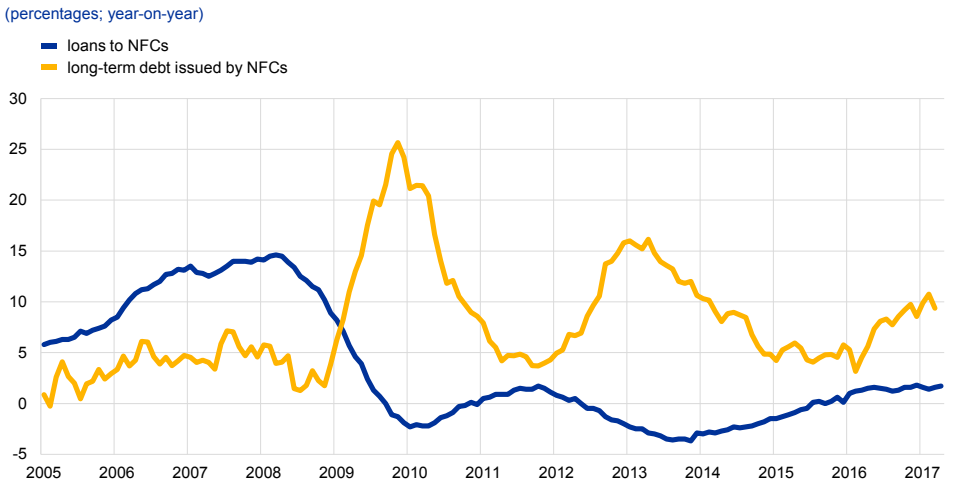


Source: Dealogic.
Notes: Infrequent euro area non-financial corporate bond issuers are defined as companies that have not issued bonds within the previous five calendar years. Data for 2017 cover the period from 1 January until 7 June. Data include all rated and non-rated euro area non-financial companies issuing in euro.

The annual growth rate of corporate bond issuance has generally increased since spring 2016 and reached around 10% in the first months of 2017. Bond issuance by euro area non-financial companies (NFCs) increased particularly during the period from 2009 to 2010 and in 2013, when it served as a substitute for bank loans against the background of a decline in lending activity by banks to NFCs. Recent growth in issuance, by contrast, has taken place amid an increase in bank loans and has therefore complemented bank lending in supporting corporate sector financing (see Chart G).

Chart G

Changes in sources of financing for euro area non-financial companies (NFCs)



Source: ECB.
Note: The data include debt issuance and loans denominated in euro to all euro area NFCs covered by the ECB securities statistics and statistics from MFIs (monetary financial institutions). The latest observation for the ECB securities statistics is March 2017 and the latest observation for the statistics from MFIs is April 2017.

The CSPP has also benefited companies which do not rely on capital markets for their financing. This is particularly so in the case of small and medium-sized enterprises (SMEs), since favourable bond market conditions have resulted in positive spill-over effects which have supported bank lending through various channels. For example, when large corporations increasingly finance themselves through bond issuances (rather than bank loans) this releases capacity in the balance sheets of banks for potential lending to SMEs. The results of the Survey on the Access to Finance of Enterprises in the euro area – October 2016 to March 2017 confirm that SMEs continued to benefit from the increased availability of bank loans at lower interest rates than reported in the previous survey.

3 Liquidity conditions and monetary policy operations in the period from 25 January to 2 May 2017

This box describes the ECB's monetary policy operations during the first and second reserve maintenance periods of 2017, which ran from 25 January to 14 March 2017 and from 15 March to 2 May 2017 respectively. During these periods the interest rates on the main refinancing operations (MROs), the marginal lending facility and the deposit facility remained unchanged at 0.00%, 0.25% and −0.40% respectively.

On 29 March the fourth targeted longer-term refinancing operation (TLTRO) in the second series of TLTROs (TLTRO-II) was settled and provided €233.4 billion to 474 bidders. The level of participation was significantly above market expectations and mostly related to the attractive pricing and the fact that this operation was the last in the series. The liquidity injected by the operation was only slightly offset by voluntary repayments in respect of the first and the second operations of the first series of TLTROs (TLTRO-I), which absorbed €16.7 billion. As a result of the net liquidity injection of €216.7 billion, the total outstanding amount under both TLTRO programmes rose to stand at €761.7 billion at the end of the review period. The settlement of the fourth TLTRO-II operation coincided with a decline in the average MRO allotment compared with the seventh and eighth maintenance periods of 2016, which fell by €10.5 billion to €23.8 billion.

In addition, the Eurosystem continued to buy public sector securities, covered bonds, asset-backed securities and corporate sector securities as part of its expanded asset purchase programme (APP), with a target of €80 billion of purchases on average per month until March 2017 and a reduced target of €60 billion per month from April 2017.

Liquidity needs

In the period under review the average daily liquidity needs of the euro area banking system, defined as the sum of autonomous factors and reserve requirements, stood at €1,086.2 billion – an increase of €93 billion compared with the previous review period (i.e. the seventh and eighth maintenance periods of 2016). This increase in liquidity needs was attributable almost exclusively to an increase in average net autonomous factors, which rose by €90.6 billion to a record high of €965.7 billion during the period under review, while minimum reserve requirements rose only marginally, increasing by €2.5 billion to €120.5 billion.

The growth in aggregate autonomous factors mainly resulted from an increase in liquidity-absorbing factors. The main contribution was made by government deposits, which grew by €19.1 billion to stand at €171.1 billion on average in the period under review. Average other autonomous factors also increased, rising by €15.7 billion to stand at €698 billion. Average demand for banknotes rose by only €4.1 billion to stand at €1,146.6 billion, stabilising after the usual year-end increase.

Table

Eurosystem liquidity conditions

	25 January 2017 to 2 May 2017		26 October 2016 to 24 January 2017	2nd maintenance period of 2017		1st maintenance period of 2017	
Liabilities – liquidity needs (averages; EUR billions)							
Autonomous liquidity factors	**1,983.7**	**(+39.0)**	**1,944.8**	**2,014.9**	**(+62.3)**	**1,952.6**	**(+9.8)**
Banknotes in circulation	1,114.6	(+4.1)	1,110.5	1,118.4	(+7.5)	1,110.8	(-8.3)
Government deposits	171.1	(+19.1)	152.0	182.0	(+21.6)	160.3	(+17.3)
Other autonomous factors	698.0	(+15.7)	682.3	714.6	(+33.1)	681.4	(+0.8)
Current accounts	**1,021.0**	**(+153.2)**	**867.8**	**1,081.1**	**(+120.2)**	**960.9**	**(+41.9)**
Monetary policy instruments	**635.1**	**(+80.0)**	**555.1**	**670.6**	**(+71.0)**	**599.6**	**(+46.4)**
Minimum reserve requirements	120.5	(+2.5)	118.0	120.6	(+0.3)	120.4	(+1.6)
Deposit facility	514.6	(+77.5)	437.1	550.0	(+70.7)	479.2	(+44.8)
Liquidity-absorbing fine-tuning operations	-	(+0.0)	-	-	(+0.0)	-	(+0.0)
Assets – liquidity supply (averages; EUR billions)							
Autonomous liquidity factors	**1,018.3**	**(-51.7)**	**1,070.0**	**1,014.7**	**(-7.2)**	**1,021.9**	**(-20.2)**
Net foreign assets	670.5	(-11.1)	681.5	678.6	(+16.2)	662.4	(-12.3)
Net assets denominated in euro	347.8	(-40.6)	388.4	336.2	(-23.4)	359.5	(-7.9)
Monetary policy instruments	**2,501.3**	**(+321.2)**	**2,180.1**	**2,631.5**	**(+260.4)**	**2,371.1**	**(+116.6)**
Open market operations	2,501.0	(+321.1)	2,179.9	2,631.2	(+260.4)	2,370.8	(+116.5)
Tender operations	654.6	(+91.4)	563.2	725.9	(+142.7)	583.3	(-0.2)
MROs	23.8	(-10.5)	34.3	18.5	(-10.5)	29.0	(-5.6)
Three-month longer-term refinancing operations (LTROs)	8.2	(-5.0)	13.3	7.4	(-1.6)	9.1	(-2.7)
First series of targeted LTROs (TLTRO-I)	32.5	(-14.7)	47.2	26.5	(-12.0)	38.5	(-2.4)
Second series of targeted LTROs (TLTRO-II)	590.1	(+121.6)	468.5	673.5	(+166.8)	506.7	(+10.4)
Outright portfolios	1,846.4	(+229.7)	1,616.7	1,905.3	(+117.9)	1,787.5	(+116.6)
First covered bond purchase programme	10.3	(-2.8)	13.1	9.6	(-1.4)	11.0	(-1.5)
Second covered bond purchase programme	6.4	(-0.6)	7.0	6.1	(-0.6)	6.7	(-0.2)
Third covered bond purchase programme	213.3	(+10.5)	202.7	215.3	(+4.1)	211.3	(+6.3)
Securities Markets Programme	99.5	(-2.7)	102.2	99.3	(-0.6)	99.8	(-2.4)
Asset-backed securities purchase programme	23.8	(+1.4)	22.4	24.1	(+0.6)	23.5	(+0.5)
Public sector purchase programme	1,422.0	(+200.8)	1,221.2	1,473.5	(+103.0)	1,370.5	(+101.9)
Corporate sector purchase programme	71.1	(+23.1)	48.0	77.5	(+12.7)	64.7	(+12.1)
Marginal lending facility	0.3	(+0.1)	0.2	0.3	(-0.0)	0.3	(+0.1)
Other liquidity–based information (averages; EUR billions)							
Aggregate liquidity needs	1,086.2	(+93.0)	993.2	1,121.1	(+69.8)	1,051.3	(+31.5)
Autonomous factors[1]	965.7	(+90.6)	875.2	1,000.5	(+69.5)	931.0	(+29.9)
Excess liquidity	1,414.8	(+228.1)	1,186.7	1,510.2	(+190.7)	1,319.4	(+84.9)
Interest rate developments (averages; percentages)							
MROs	0.00	(+0.00)	0.00	0.00	(+0.00)	0.00	(+0.00)
Marginal lending facility	0.25	(+0.00)	0.25	0.25	(+0.00)	0.25	(+0.00)
Deposit facility	-0.40	(+0.00)	-0.40	-0.40	(+0.00)	-0.40	(+0.00)
EONIA	-0.354	(-0.004)	-0.350	-0.356	(-0.003)	-0.352	(-0.001)

Source: ECB.
Notes: Since all figures in the table are rounded, in some cases the figure indicated as the change relative to the previous period does not represent the difference between the rounded figures provided for these periods (differing by €0.1 billion).
1) The overall value of autonomous factors also includes "items in course of settlement".

In addition, liquidity-providing autonomous factors decreased over the review period, as a result of the continuing decline in net assets denominated in euro and a slight decrease in net foreign assets. Average net assets denominated in euro fell to €347.8 billion, down €40.6 billion from the previous review period, on

account of a decline in financial assets held by the Eurosystem for purposes other than monetary policy. Moreover, there was an increase in liabilities held with national central banks by foreign official institutions. Average net foreign assets decreased by €11.1 billion to €670.5 billion.

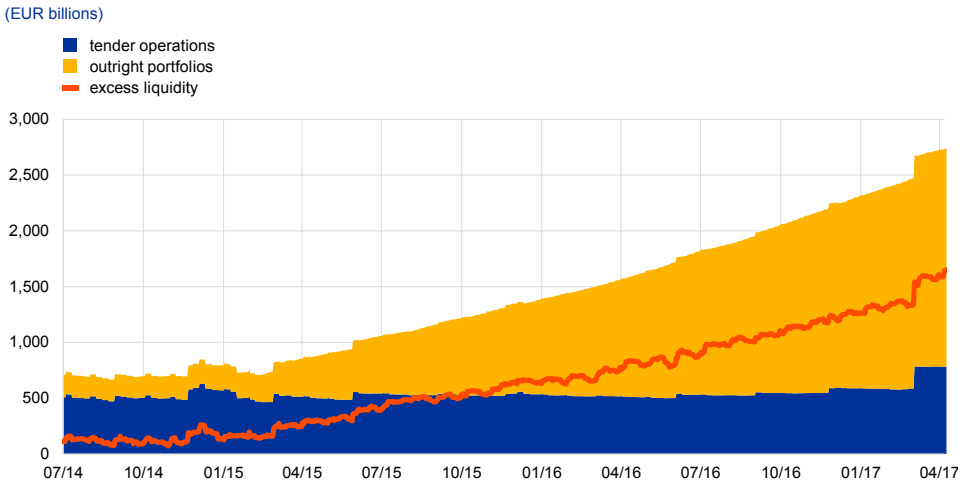
The volatility of autonomous factors remained elevated at levels broadly unchanged from the previous review period. That volatility primarily reflected fluctuations in both government deposits and net assets denominated in euro.

Liquidity provided through monetary policy instruments

The average amount of liquidity provided through open market operations – both tender operations and the asset purchase programmes – increased by €321.1 billion to stand at €2,501 billion at the end of the period (see the chart). This increase was primarily due to the ECB's expanded APP and the fourth TLTRO-II operation, which was settled for an amount of €233.4 billion on 29 March 2017.

Chart

Evolution of monetary policy instruments and excess liquidity



Source: ECB.

The average amount of liquidity provided through tender operations increased by €91.4 billion to stand at €654.6 billion. The increase in the liquidity provided by TLTROs more than offset the decline in the liquidity supplied via regular operations. Average liquidity provided via MROs and three-month LTROs decreased by €10.5 billion and €5 billion respectively, while the average outstanding amount under the TLTROs increased by €106.9 billion as a net effect of the settlement of the fourth TLTRO-II operation and voluntary early repayments of funds borrowed via the first and second operations of the TLTRO-I series.

Average liquidity provided through the APP increased by €229.7 billion to stand at €1,846.4 billion, mainly on account of the public sector purchase programme (PSPP). Average liquidity provided under the PSPP, the third covered bond purchase programme, the asset-backed securities purchase programme and

the corporate sector purchase programme rose on average by €200.8 billion, €10.5 billion, €1.4 billion and €23.1 billion respectively. The redemption of bonds held under the Securities Markets Programme and the first and second covered bond purchase programmes totalled €6.1 billion.

Excess liquidity

As a consequence of the developments detailed above, average excess liquidity rose by €228.1 billion to stand at €1,414.8 billion in the period under review (see the chart). Most of that increase materialised in the second maintenance period of 2017, when average excess liquidity rose by €190.7 billion on account of liquidity provided by the fourth operation of the TLTRO-II series. At the same time, the target for average monthly asset purchases under the purchase programmes was reduced to €60 billion from April 2017. The smaller increase of €84.9 billion recorded in the first maintenance period was largely due to developments in the liquidity provided by outright purchases, which increased by €116.6 billion but was partially offset by a €20.2 billion decline in liquidity-providing autonomous factors.

The increase in excess liquidity translated into higher average current account holdings, which rose by €153.2 billion to stand at €1,021 billion in the period under review, while the average recourse to the deposit facility increased further, rising by €77.5 billion to stand at €514.6 billion.

Interest rate developments

Overnight money market rates remained close to the deposit facility rate, with rates for specific collateral baskets in the secured segments even falling below that level. In the unsecured market, the euro overnight index average (EONIA) averaged −0.354%, down marginally from an average of −0.350% in the previous review period. The EONIA fluctuated within a relatively narrow range, recording a high of −0.345% on the final day of both January and February 2017 and a historical low of −0.363% in the run-up to the end of April. Furthermore, in the secured market, average overnight repo rates in the GC Pooling market[13] declined slightly, with the standard collateral basket standing at −0.423% and the extended basket standing at −0.403%, down 0.018 and 0.005 percentage point respectively relative to the previous review period.

The quarter-end decline in the core repo rates recorded in March was less pronounced than the decline recorded at the year-end. This may be taken as an indication that market participants prepared earlier, and to a greater degree, for collateral liquidity shortfalls. Moreover, this development could reflect positive effects from the cash collateral facility for PSPP securities lending.

[13] The GC Pooling market allows repurchase agreements to be traded on the Eurex platform against standardised baskets of collateral.

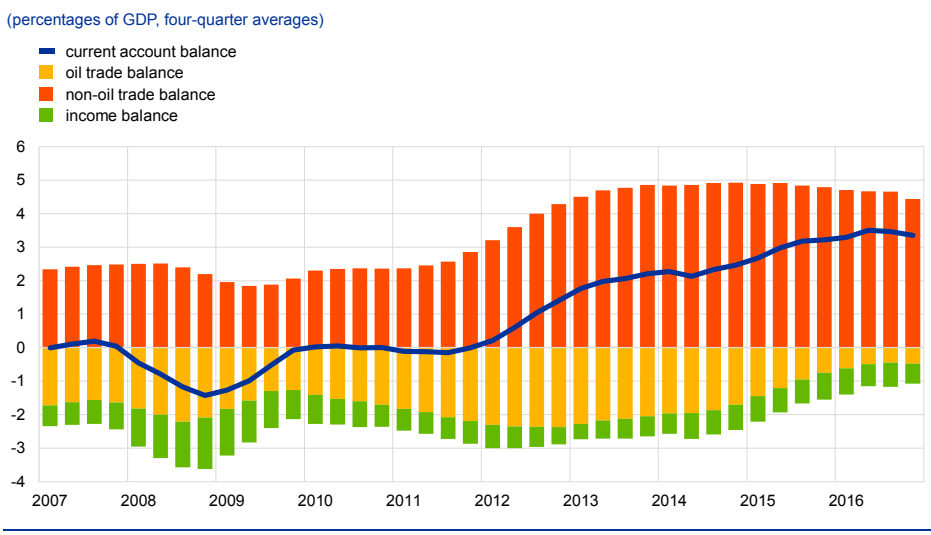
4 Recent developments in the euro area current account balance

Since the start of the decade the euro area current account balance has risen steadily from a broadly balanced position to a surplus. In 2016 the surplus stabilised at just above 3% of GDP. This box looks into the main factors behind this development.

In 2016 the euro area registered a current account surplus of 3.3% of GDP, slightly above the 3.2% recorded in 2015. The deficits in the oil trade balance and combined income balance contracted modestly, while the surplus in the non-oil trade balance continued to shrink (see Chart A). The small overall increase in the current account surplus in 2016 masks the fact that the surplus started to decrease on a four-quarter average basis in the second half of the year, when oil prices recovered somewhat. This development contrasts with the period between mid-2014 and mid-2016 when the shrinking of the oil trade deficit due to the decline in oil prices almost entirely explained the widening of the euro area's current account surplus.[14]

Chart A

Main items of the euro area current account balance



Sources: ECB and Eurostat.
Note: The income balance includes the primary and secondary income balances. The decomposition of the trade balance into its oil and non-oil components is based on Eurostat's external trade statistics. The non-oil trade balance includes services. The latest observation is for the fourth quarter of 2016.

Euro area imports and exports declined relative to GDP in 2016 as a result of price developments which more than offset an increase in trade volumes (see Chart B). The decline in nominal trade relative to GDP was driven by falling import and export prices, while the overall GDP deflator increased in 2016.[15] However, in

[14] See also the box entitled "The impact of the oil price decline on the current account surplus of the euro area", *Economic Bulletin*, Issue 2, ECB, 2016.

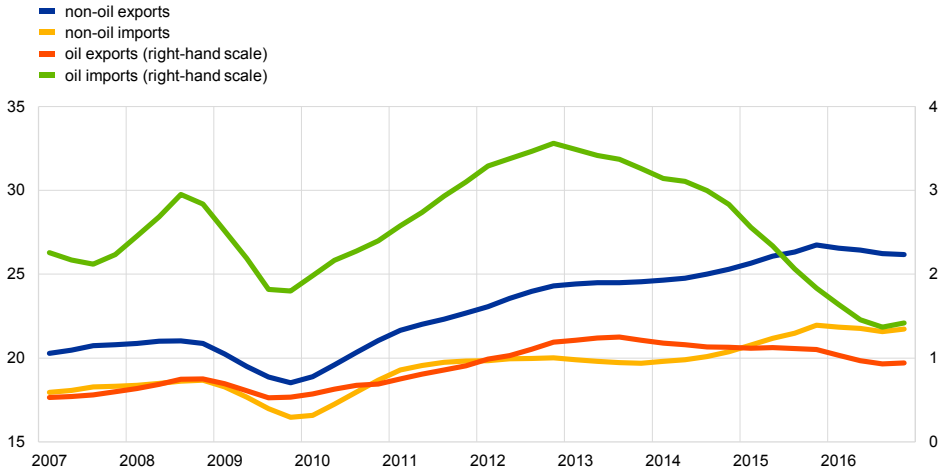
[15] According to national accounts data euro area import and export prices declined by 2.4% and 1.3% in 2016 respectively, whereas the GDP deflator increased by 0.9%.

volume terms, euro area trade expanded at a faster pace than GDP, with real imports rising by 4.0% and real exports by 2.9%, while real GDP grew by 1.7%. The robust growth in trade volumes is consistent with the ongoing recovery in the euro area and the global economy. Since the drop in nominal trade flows relative to GDP was more pronounced for exports than for imports, the euro area trade surplus decreased slightly.

Chart B

Breakdown of euro area exports and imports

(percentages of GDP, four-quarter averages)



Sources: ECB and Eurostat.
Note: The decomposition of exports and imports into oil and non-oil components is based on Eurostat's external trade statistics. Non-oil trade includes services. The latest observation is for the fourth quarter of 2016.

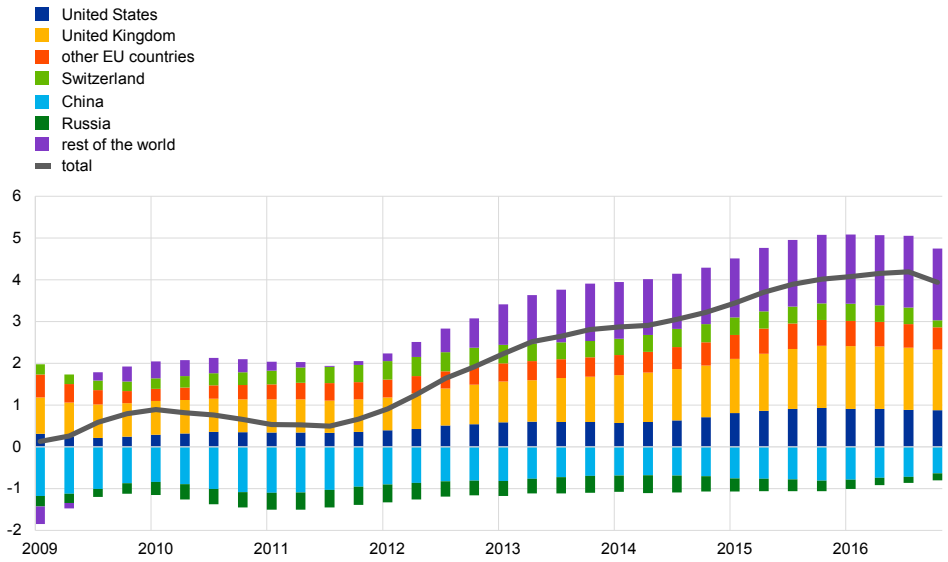
The euro area's trade surpluses vis-à-vis the non-euro area EU countries and the United States declined by around 0.1% of GDP in 2016 compared with 2015, while its deficits with China and Russia shrank by 0.2% and 0.1% of GDP respectively (see Chart C).[16] In 2016 the euro area's bilateral trade surplus vis-à-vis the non-euro area EU countries stood at around 2% of GDP, while the surplus accrued with the United States was around 0.9% of GDP. The United Kingdom accounted for around three-quarters of the trade surplus vis-à-vis the non-euro area EU countries in 2016. At the same time, the euro area recorded trade deficits vis-à-vis China and Russia, of -0.6% and -0.2% of GDP respectively.

[16] The analysis focuses on the trade balance, since a geographical decomposition is not available for the total current account balance.

Chart C

Geographical breakdown of the euro area trade balance

(percentages of GDP, four-quarter averages)

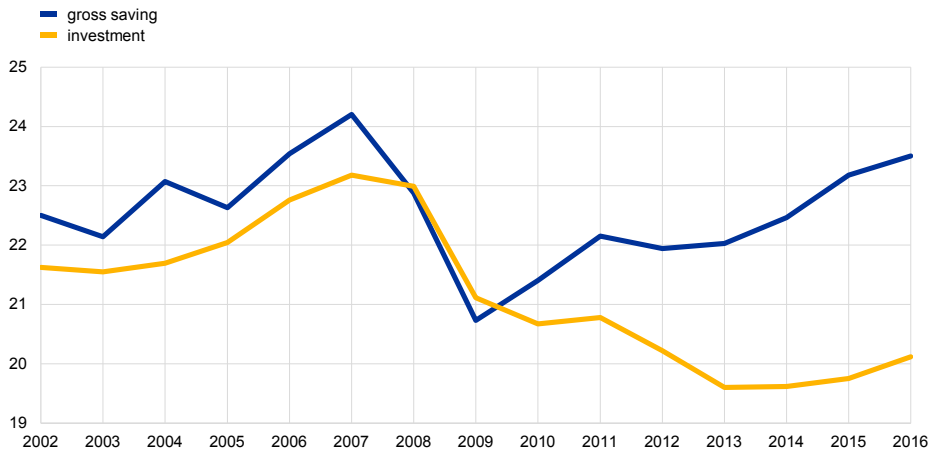


Sources: ECB and Eurostat.
Note: "Other EU countries" comprises EU Member States outside the euro area excluding the United Kingdom. The latest observation is for the fourth quarter of 2016.

From a saving-investment perspective, the stabilisation in the current account balance in 2016 reflects a pick-up in investment which broadly offset the continuing increase in gross saving (see Chart D). According to a simple accounting identity, the current account balance broadly corresponds to the gap between domestic saving and investment, i.e. net lending or net borrowing. The widening of the euro area's net lending position in previous years reflected a steady increase in gross saving and subdued investment (relative to GDP). Since economic activity started to recover in 2013, however, both the saving and the investment to GDP ratios have edged up. The private sector currently registers a net lending position, while the public sector continues to record a net borrowing position, which, however, has shrunk significantly in recent years.

Chart D

Euro area gross saving and investment

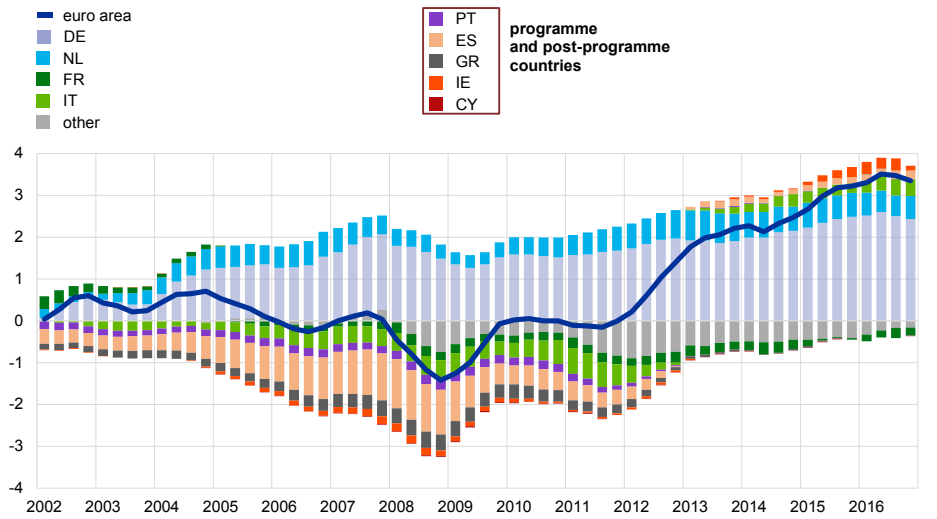


Source: European Commission.
Note: The latest observation is for 2016.

Germany contributed most to the euro area current account surplus in 2016, although other countries also made significant contributions (see Chart E). In 2016 Germany's current account surplus stood at 2.4% of euro area GDP, followed by the Netherlands (0.6%), while positive contributions of between 0.1% and 0.4% of euro area GDP were made by Italy, Spain and Ireland. By contrast, France recorded a current account deficit of 0.2% of euro area GDP.

Chart E

Current account balance of the euro area and selected euro area countries

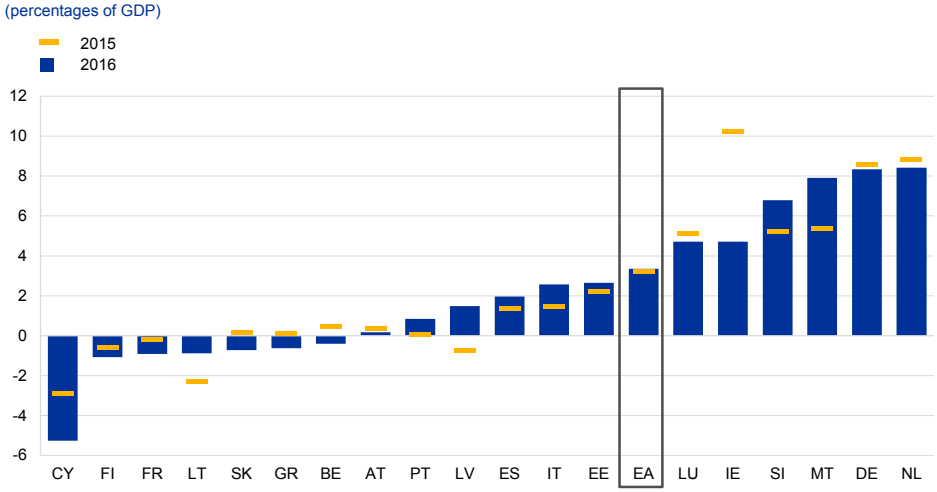


Sources: ECB and Eurostat.
Note: The second legend column shows countries which are or have been subject to a financial assistance programme. "Other" includes the euro area countries not shown in the chart and a statistical discrepancy to account for the fact that country-level data do not always add up to the euro area aggregate. The latest observation is for the fourth quarter of 2016.

At the euro area country level, the current account developments in 2016 were relatively heterogeneous (see Chart F). During the external adjustment process over recent years, euro area countries that had large current account deficits before the global financial crisis have seen a significant correction and, in many cases, have turned these deficits into surpluses. In 2016, the most notable current account improvements compared with 2015 were observed in Malta and Latvia, while the current account surpluses of Slovenia, Italy, Portugal, Spain and Estonia also increased further. The most pronounced current account deterioration, albeit starting from an elevated surplus, was recorded in Ireland, followed by Cyprus which recorded an increasing deficit. The sizeable and persistent current account surpluses of Germany, the Netherlands and Luxembourg narrowed slightly in 2016.

Chart F

Current account balances of the euro area and the euro area countries



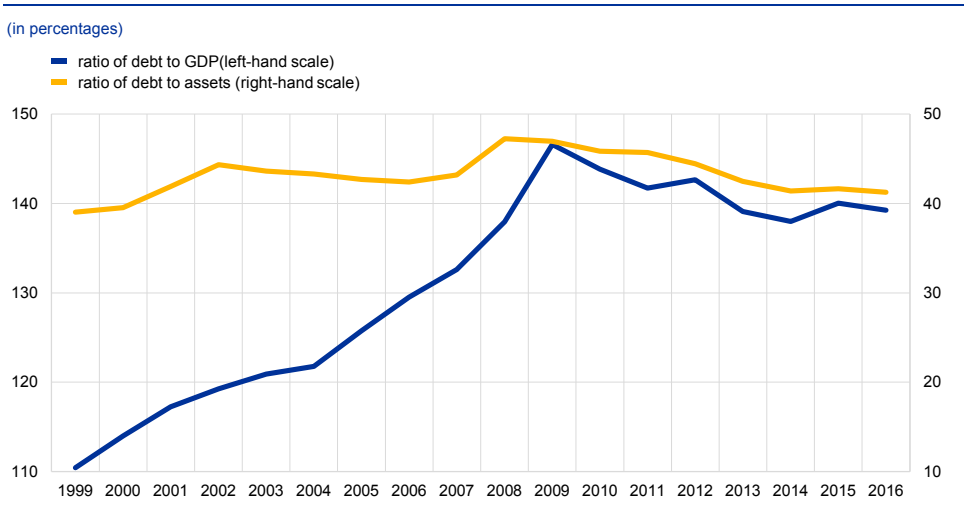
Sources: ECB and Eurostat.

5 Private sector indebtedness and deleveraging in the euro area countries

Rising private sector debt-to-GDP ratios have been a pre-crisis feature of many euro area countries. In the run-up to the financial crisis, buoyant demand growth and the associated credit boom led to the build-up of large volumes of domestic debt in several euro area countries. Private sector debt (i.e. debt of households and non-financial corporations)[17] in the euro area as a whole rose from 110% of GDP in 1999 to 147% of GDP in 2009 (see Chart A). For most euro area countries the increase from 1999 to the peak has been significantly higher than that observed for the euro area as a whole (see Chart B). Only in Germany has the private sector debt-to-GDP ratio been on a downwards path since 1999. The private sector debt-to-GDP ratio, which can be considered a measure of medium- to long-term affordability of debt, clearly showed an upwards trend prior to 2009. But such a trend is much less evident when looking at debt as a percentage of total assets (the leverage ratio) – which, during the pre-crisis expansionary period, did not signal a possible build-up of over-indebtedness. The leverage ratio is measured on the basis of market prices of assets, and the evolution of these asset prices has partially hidden the vulnerability associated with the increase in indebtedness. This box reviews recent developments in private sector indebtedness and deleveraging, focusing on the debt-to-GDP ratio as a measure.

Chart A

Private debt in the euro area



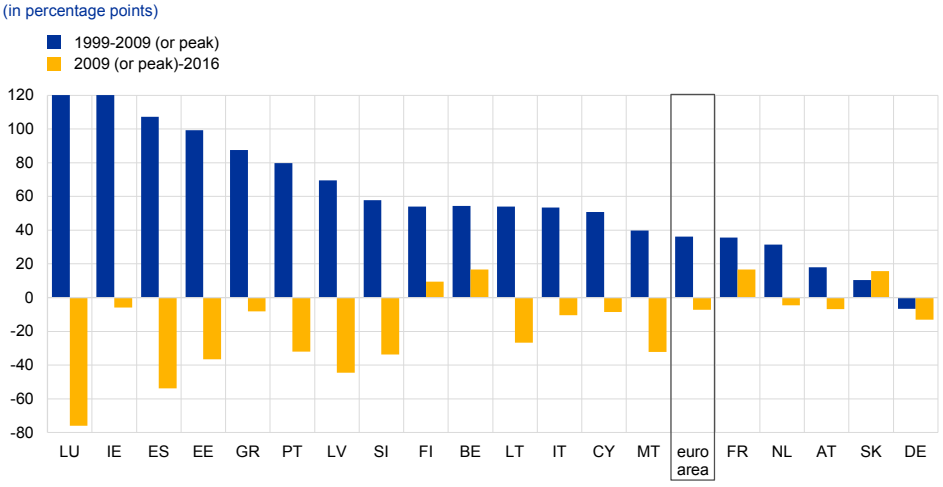
Source: Eurostat.
Note: Total assets include financial and non-financial assets (housing wealth and fixed assets of non-financial corporations).

17 In this box, private sector debt is defined as the sum of total loans granted to households and to non-financial corporations, net of intra-sectoral loans and debt securities issued by non-financial corporations. The definition used corresponds to that adopted in the scoreboard of the Macroeconomic Imbalance Procedure. This definition does not include pension entitlements. For the euro area as a whole, private sector debt in 2016, including pension entitlements was 143% of GDP, and 139% of GDP if pension entitlements are excluded.

Since reaching its peak in 2009, private sector debt as a percentage of GDP has been on a slight downwards trend in the euro area as a whole. From 147% of GDP in 2009, private sector debt fell to 139% of GDP in 2016. This relatively modest decline hides significant differences across countries. In some highly indebted countries private sector debt-to-GDP ratios have been falling significantly since their peak. The reduction in the ratio has been very marked in Spain (54 percentage points since the peak in 2009), amounting to half of the increase over the previous ten years; the reduction has also been significant in Estonia, Latvia, Lithuania, Luxembourg, Malta, Portugal and Slovenia (see Chart B). By contrast, other highly indebted countries (with a private sector debt-to-GDP ratio above 200%), namely Ireland, Cyprus and the Netherlands, have not shown any major decline in their ratios. Private sector debt-to-GDP ratios have been growing continuously over the past 18 years in Belgium, France, Slovakia and Finland.

Chart B

Change in private sector debt-to-GDP ratios



Source: Eurostat.
Notes: The blue bar is truncated for LU (157 percentage points) and IE (136 percentage points). The peak was in 2009 in EE, ES, LT, MT, NL, AT and PT; in 2007 in LU; in 2010 in LV and SI; in 2012 in IE, GR and IT; and in 2014 in CY.

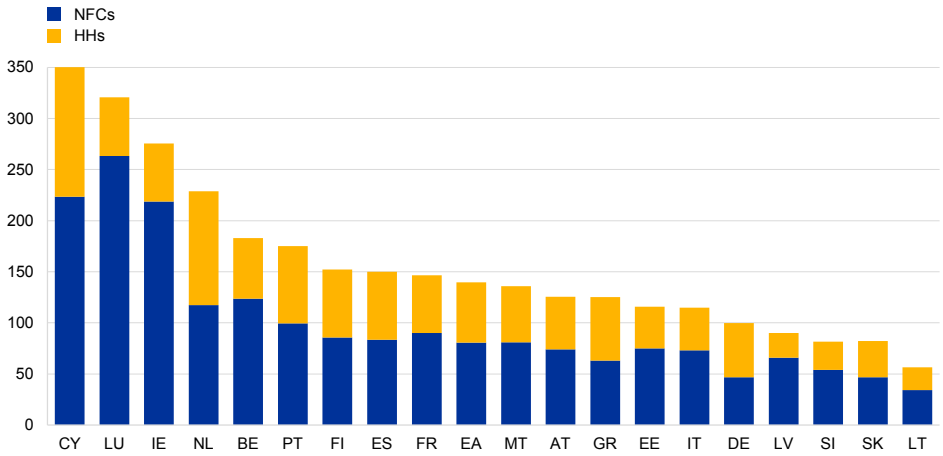
Even after the post-crisis adjustment, private sector debt-to-GDP ratios have remained very heterogeneous across countries in the euro area. Chart C shows that private sector debt ratios at the end of 2016 ranged from about 50% of GDP to 350% of GDP. In most countries, private sector debt ratios are above 100% of GDP and the threshold in the scoreboard of the Macroeconomic Imbalance Procedure (133% of GDP) is exceeded by ten euro area countries (see Chart C). While this threshold is a purely statistical indicator[18], which does not take into account economic fundamentals, it signals that in some countries deleveraging needs might still exist. It should be noted that a conclusive assessment of the extent of deleveraging needs would also require a supplementary analysis of the distribution of debt across households and non-financial corporations, together with their respective underlying characteristics.

[18] The threshold is computed as the cut-off point of the third quartile of the EU-wide distribution of private debt over the period 1995-2007.

Chart C

Debt of non-financial corporations (NFCs) and households (HHs) (2016)

(in percentage of GDP)



Source: Eurostat.
Note: The total debt (of non-financial corporations and households) for CY is 350.6%.

The decomposition between debt held by households (HHs) and by non-financial corporations (NFCs) shows that the proportion of the latter is on average larger. There are three exceptions: Germany, where the proportion of debt held by HHs is higher than that held by NFCs; and Greece and the Netherlands, where the proportion of debt held by each sector is approximately equal. The NFC debt-to-GDP ratio is very high in Ireland, Cyprus and Luxembourg. In these countries the value of NFC-held debt is, however, particularly affected by large cross-border intra-company loans.

There is a growing body of empirical literature which shows that high levels of private sector debt can have significant adverse effects on future economic outcomes. While private indebtedness, at moderate levels, helps to smooth consumption and enhance economic growth, an excessive increase in private sector debt over the medium term can affect capital accumulation and lead to lower economic growth.[19] This occurs because investment is reduced as companies need income to repay their debt and private consumption is also reduced as overleveraged households need to increase savings to cover debt service obligations. Moreover, banks' lending suffers as high private sector indebtedness is often associated with rising non-performing loans, which tend to erode banks' capital buffers.[20] Some empirical analysis shows that these adverse effects occur only above a certain threshold.[21] There is also evidence that delays in dealing with debt overhangs can lead to lower firm exit rates and can significantly affect the degree of capital and labour reallocation across firms and sectors which, in the medium term,

19 See Myers, S. C., "Determinants of Corporate Borrowing", *Journal of Financial Economics*, Vol. 5, Issue 2, 1977, pp. 145-175.

20 See Mian, A.R., Sufi, A. and Verner, E., "Household debt and business cycles worldwide", National Bureau of Economic Research Working Papers No 21581, issued September 2015.

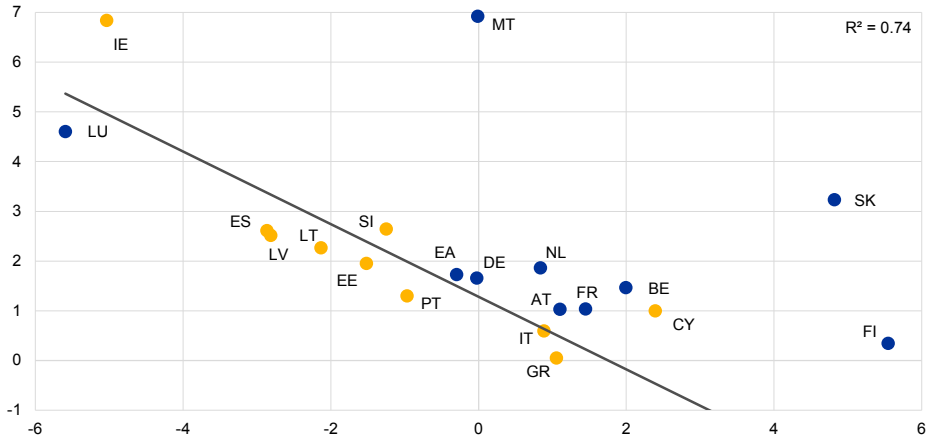
21 See Cecchetti S., Mohanty M. and Zampolli F., "The real effects of debt", BIS Working Papers No 352, September 2011.

lowers aggregate productivity in the economy.[22] It is therefore important to monitor developments in private sector indebtedness, the risk of debt overhang and any consequence associated with high deleveraging needs.

Chart D

Changes in credit (2008-13) and subsequent changes in per capita real GDP (2013-16)

(x-axis: average private credit growth 2008-13; y-axis: average per capita real GDP growth 2013-16)



Source: Eurostat.
Notes: For IE, per capita real GDP growth is computed as the average in 2013-2014 and 2016, i.e. 2015 is excluded from the average, due to statistical distortions. Yellow dots are used to indicate countries undergoing major adjustment challenges during the period from 2008 to 2010. These include euro area countries with average credit default swaps during the period from 2008 to 2010 above 150bp.

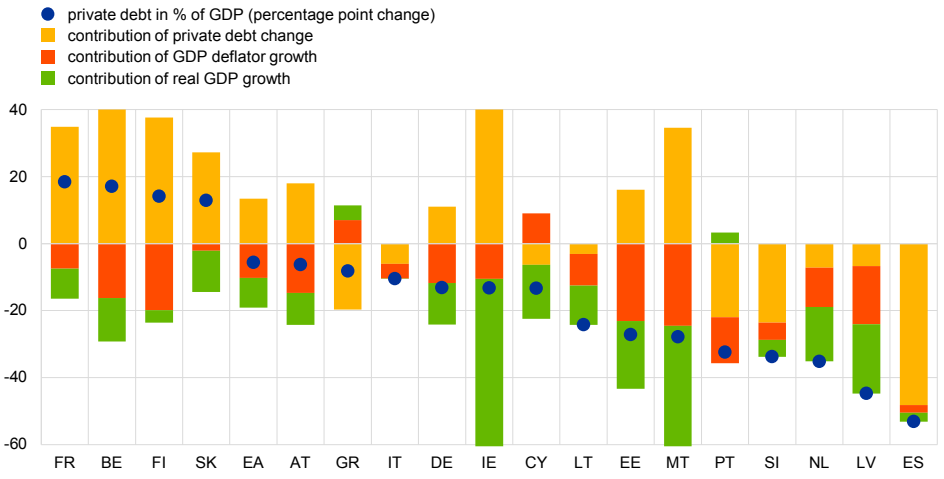
The deleveraging process across euro area countries has come about as a result of both nominal GDP growth and a reduction in private debt. Empirical evidence shows that a rapid and front-loaded deleveraging process tends to be associated with medium-term output gains.[23] This also seems to be the case in the experience of the euro area, where early and swift deleveraging episodes (e.g. in Estonia, Ireland, Spain, Latvia, Lithuania and Slovenia) have been associated with subsequent higher real GDP growth per capita (see Chart D). Chart E shows that in four countries (Greece, Spain, Portugal and Slovenia) the deleveraging process has occurred mainly through a reduction in nominal debt, i.e. via debt repayments or write-offs. In five countries (Italy, Cyprus, Latvia, Lithuania and the Netherlands) it occurred as a result of a combination of a reduction in nominal debt and an increase in nominal GDP. In five countries (Germany, Estonia, Ireland, Malta and Austria) deleveraging was driven exclusively by nominal GDP growth. The chart also shows that unfavourable nominal GDP developments caused headwinds for the debt-reduction process in Greece, Cyprus and Portugal.

22 See Schivardi, F., Sette, E. and Tabellini, G., "Credit Misallocation During the European Financial Crisis", Centre for Economic Policy Research Discussion Paper, No DP11901, March 2017, and McGowan, M. A., Andrews, D. and Millot, V., "The walking dead? Zombie firms and productivity performance in OECD countries", OECD Working Papers No 1372, January 2017.

23 See Chen, S., Kim, M., Otte, M., Wiseman K. and Zdzienicka, A., "Private sector deleveraging and growth following busts", IMF Working Papers No 15/35, February 2015.

Chart E

Decomposition of the changes in the private sector debt-to-GDP ratio from the peak until Q4 2016



Source: Eurostat.
Notes: The peak in the euro area, EE, ES, LT, MT, NL, AT and PT was in 2009; in LV and SI it was in 2010; in IE, GR and IT it was in 2012; and in CY it was in 2014. The green bar is truncated for IE (-86.4 percentage points) and MT (-37.8 percentage points); the yellow bar is truncated for BE (+46.3 percentage points) and IE (+83.7 percentage points).

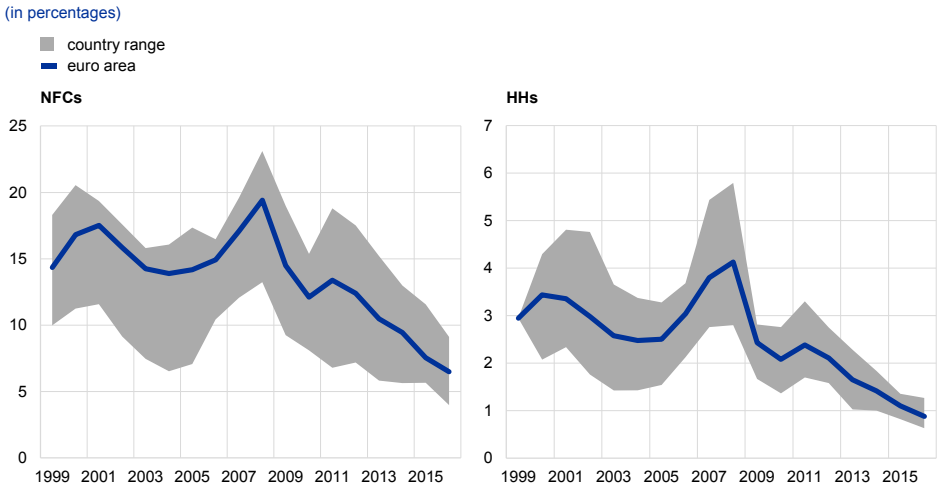
The current deleveraging process has been supported by a significant reduction in interest payments. The maturity structure and the interest payments measure the short-term debt burden and thus can provide information about short term risks associated with the ability to meet debt repayment schedules. While aggregate data on the average maturity structure of loans and securities across households and firms are not widely available, a short-term indicator of borrower stress can be defined as the ratio of interest payments to income. This indicator is shown in Chart F, where the blue line represents the average interest payment-to-income ratio for the euro area, and the shaded areas represent the interquartile range across the euro area countries. Both HH and NFC interest payment-to-income ratios demonstrate a common downwards trend, in particular since 2009. For the euro area as a whole, the average of household interest payments has decreased from 4.1% (in 2008) to 0.9% (in 2016) of gross disposable income, while the average of NFC interest payments fell from 19.4% (in 2008) to 6.5% (in 2016) of gross operating surplus. However, heterogeneity across countries differs between the two sectors. While the cross-country variation of the household interest burden seems to have fallen since the crisis, heterogeneity in interest payment-to-income ratios for NFCs remains relatively significant. The higher heterogeneity found for NFCs indicates that across countries the risk premium associated with NFC debt is currently higher than that associated with HH debt.

Looking forward, and given the high debt levels in some countries, deleveraging needs might continue to exist. This box has shown that the recovery in GDP and the low interest rate environment have helped the deleveraging process. Further deleveraging could take place via the expansion of nominal GDP. From a policy perspective, better debt workout mechanisms would facilitate balance sheet adjustments. In particular, policies to further improve insolvency frameworks, including enhanced efficiency of judicial processes and out-of-court mechanisms,

could make a significant contribution to a swift and sustainable reduction of non-performing debt, lead to more efficient rescues of viable firms and increase debt recovery for lenders.

Chart F

Interest payment-to-income ratios for non-financial corporations (NFCs) and households (HHs)



Source: Eurostat.
Notes: Income is measured as gross disposable income for households and gross operating surplus for non-financial corporations. The country range is the interquartile range across euro area countries. Household data for Estonia, Cyprus, Latvia, Lithuania, Luxembourg, Malta and Slovakia are not available. Non-financial corporation data for Luxembourg and Malta are not available.

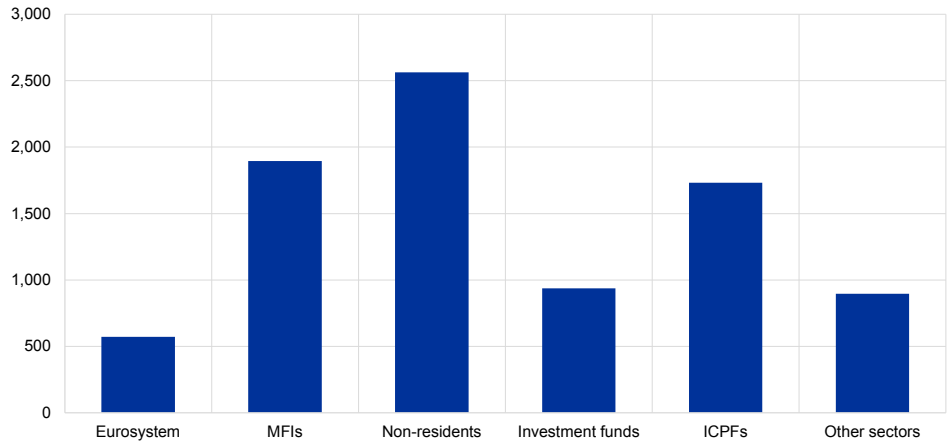
6 Which sectors sold the government securities purchased by the Eurosystem?

At the end of 2014, immediately prior to the start of the public sector purchase programme (PSPP), three sectors held almost three-quarters of all debt securities issued by euro area governments. The non-euro area residents sector, a heterogeneous sector mainly comprising large institutional investors (both private and public), but also including very active market participants, held the largest share, accounting for 30% of the total outstanding amounts. Monetary financial institutions (MFIs) other than the Eurosystem (henceforth simply MFIs) held 22%. Insurance corporations and pension funds (ICPFs), typically characterised as long-term investors with strong preferences for specific maturity brackets, held 20%. Among the remaining sectors, investment funds other than money-market funds had the largest holding, amounting to 11% of outstanding euro area government securities. The remainder was distributed between the Eurosystem (7%) and all other sectors as a whole (households, non-financial corporations and financial intermediaries not classified in any of the above sectors), which together accounted for the final 10% of the total (see Chart A).

Chart A

Holdings of euro area government debt securities by sector prior to the PSPP (fourth quarter of 2014)

(outstanding amounts in EUR billions)



Source: ECB, based on the quarterly sector accounts.
Note: At the end of the fourth quarter of 2014 the total outstanding amount of debt securities issued by the euro area general government sector was €8.6 trillion.

Net of valuation and reclassification effects, the largest declines in holdings of euro area government securities since the start of the PSPP correspond to the non-resident and MFI sectors. Between the second quarter of 2015 and the fourth quarter of 2016 the Eurosystem purchased a net amount of €919 billion.[24] Practically

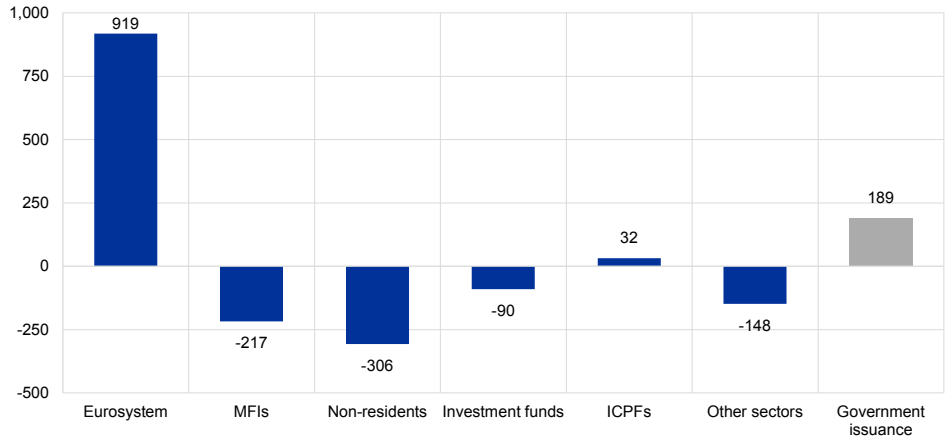
[24] Net purchases of government securities by the Eurosystem also include redemptions under the Securities Markets Programme and net purchases under the Agreement on Net Financial Assets. In addition, PSPP purchases include some securities not reported within the statistical classification of government securities. These factors explain the discrepancy between the figures reported in this box and the data on actual PSPP purchases published on the ECB's website.

all other sectors recorded negative flows, with non-residents (−€306 billion) and MFIs (−€217 billion) recording the largest negative flows (see Chart B). However, the analysis of actual flows does not provide an accurate picture of how the Eurosystem purchases have affected the behaviour of each sector with respect to euro area government securities. For instance, ICPFs acquired a net amount of €32 billion in the period from the second quarter of 2015 to the fourth quarter of 2016. This does not mean that the PSPP had no impact on ICPFs' purchasing of government securities, as the effect can only be calculated relative to the purchases that each sector would have carried out, and how the issuance of new debt securities would have been distributed across sectors, in the absence of the PSPP.

Chart B

Net flows of euro area government debt securities by sector between the second quarter of 2015 and the fourth quarter of 2016

(EUR billions)



Source: ECB, based on the quarterly sector accounts.

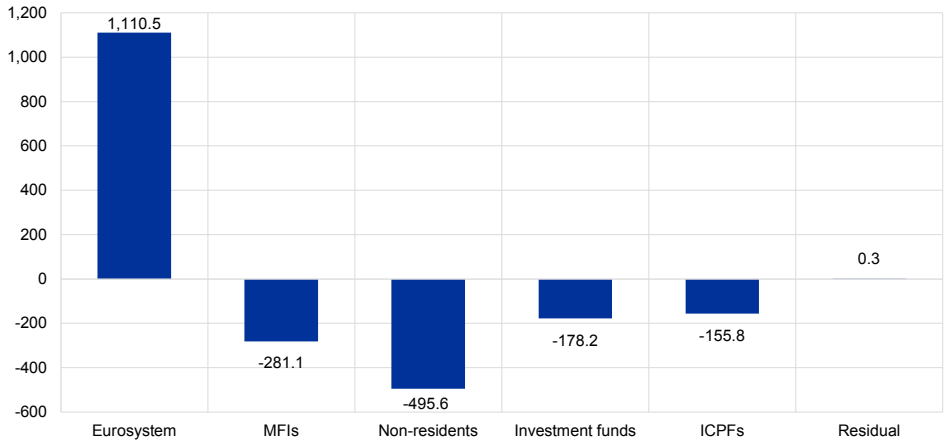
Non-residents and, to a lesser extent, MFIs are estimated to have reduced their holdings of government securities the most in absolute terms since the launch of the PSPP. To analyse each sector's response to the purchases of government bonds by the Eurosystem, it is first necessary to estimate the net flows that would have occurred in the absence of the PSPP (i.e. the counterfactual flows). This is achieved by using variables that typically determine the purchasing behaviour of each sector but which are not affected by the PSPP.[25] The impact of the PSPP on each sector's holdings of government securities is computed as the difference between actual and counterfactual flows.

[25] The estimates follow the approach used by Joyce et al. (Joyce, M., Liu, Z. and Tonks, I., "Institutional investors and the QE portfolio balance channel", *Journal of Money, Credit & Banking*, forthcoming). For MFIs and non-residents, the regressors are the net issuance of government securities, net purchases of the Eurosystem before the PSPP and the VIX, which is an index that captures international market volatility. For investment funds and ICPFs, variables that depict the liability side of the sectors are used, namely the net issuance of shares/units for investment funds and insurance technical reserves for ICPFs, as the investment behaviour of these sectors is likely to be influenced to a large extent by customer claims. For further details on the implementation of this approach for the euro area, see Adalid, R. and Palligkinis, S., "*Sectoral Sales of Government Securities During the ECB's Asset Purchase Programme*", SSRN mimeo, December 2016.

Chart C

Estimated impact of the PSPP on the holdings of euro area government securities by sector in terms of flows (March 2015 to March 2017)

(accumulated flows in EUR billions)



Sources: MFI balance sheet statistics for MFIs; balance of payments for non-residents; investment fund statistics for investment funds; quarterly sector accounts for ICPFs; euro area securities issues for issuance of government securities; and DataStream for the VIX volatility index (the latter two are only used when estimating the counterfactual net purchases).
Notes: The estimated impact is calculated as actual flows minus counterfactual net purchases, based on the estimated purchasing behaviour of each sector in the pre-PSPP period. The periods covered are March 2015 to March 2017 for the Eurosystem, MFIs, non-residents and government securities issuance; the second quarter of 2015 to the first quarter of 2017 for investment funds; and the second quarter of 2015 to the fourth quarter of 2016 for ICPFs. The data have been extrapolated to cover periods for which no data are available: March 2015 for investment funds; and March 2015 and the first quarter of 2017 ICPFs. The residual comprises all remaining sectors as well as data discrepancies.

The results show that between March 2015 and March 2017 non-residents are estimated to have reduced their holdings of euro area government securities by €496 billion relative to the situation that would have prevailed if the net purchases of government securities by the Eurosystem had been zero (see Chart C). This amount is equivalent to 45% of the net purchases of government securities carried out by the Eurosystem in the period from March 2015 to March 2017. An analogous calculation indicates that MFIs reduced their holdings by the equivalent of about 25% (€281 billion) of Eurosystem net purchases. The holdings of investment funds and ICPFs are estimated to have been reduced by the equivalent of 16% and 14% respectively of the net Eurosystem purchases.[26] These findings are not surprising, given that non-residents and MFIs also had the largest holdings of government securities immediately prior to the launch of the PSPP.

Relative to their initial holdings, non-residents and investment funds are estimated to be the sectors which have reacted most strongly to the Eurosystem purchases. To evaluate the relative response of each sector to the Eurosystem purchases, the estimated impact is expressed relative to the sector's pre-PSPP holdings. This comparison reveals that non-residents and investment funds showed the strongest response, with the impact on both sectors amounting to

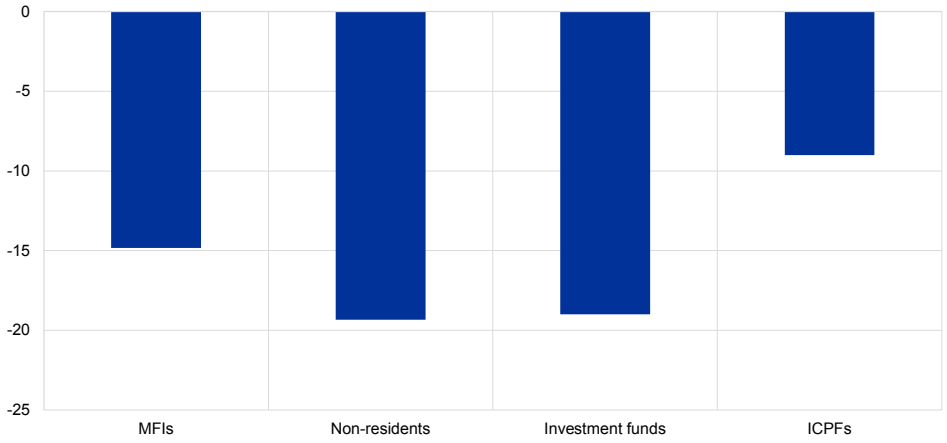
[26] Charts B and C contain differences in the underlying data owing to the use of different time periods and data sources. Chart B reports flows for all sectors consistently from the quarterly sector accounts, which are currently only available up to the fourth quarter of 2016. Chart C uses individual sectoral statistics. These statistics are available on a monthly basis for non-residents and MFIs, which are the two most relevant sectors for the analysis presented in this box. This allows the analysis to start contemporaneously with the beginning of the PSPP, in March 2015, and to extend it up to March 2017.

about 20% of their holdings of euro area government securities prior to the PSPP. By contrast, the reaction of the ICPF sector, one of the largest holders of government securities, equates to less than 10% of the sector's pre-PSPP holdings. With 15%, MFIs showed an intermediate reaction. The relatively small response of ICPFs is likely to reflect the investment strategies of this sector, which are dominated by the need to meet their long-term commitments and are subject to considerable regulatory constraints. By contrast, the non-resident and investment fund sectors are likely to comprise a larger share of active market participants, who are more driven by yield considerations.

Chart D

Estimated impact of the PSPP on holdings of euro area government securities by sector (March 2015 to March 2017) relative to holdings prior to the programme

(percentages of outstanding amounts in Q4 2014)



Sources and notes: See Charts A and C.

7 Country-specific recommendations for fiscal policies under the 2017 European Semester

On 22 May the European Commission issued its country-specific recommendations for economic and fiscal policies for all EU Member States except Greece, together with recommendations for implementing the European Union's Stability and Growth Pact (SGP) for individual countries. The country-specific recommendations were finalised and approved by the aforementioned Member States' economics and finance ministers on 16 June. They are scheduled to be endorsed by the European Council on 22-23 June and will be published in mid-July.[27] The Council's fiscal policy recommendations are intended to ensure that EU countries comply with the SGP. To this end, they include assessments of the 2017 updates to stability and convergence programmes, which governments had submitted to the European Commission and the Council in the course of April. In terms of follow-up, the country-specific recommendations for euro area countries' fiscal policies issued under the 2017 European Semester should be reflected in governments' draft budgetary plans for 2018. These plans need to be submitted to the Eurogroup and the European Commission by mid-October 2017. Against this background, this box examines the recommendations for fiscal policies that were addressed to the 18 euro area countries.

According to the European Commission's Spring 2017 Economic Forecast, the improvement in the euro area's budgetary position is accompanied by a split between countries regarding progress towards sustainable public finances. On the one hand, the Commission has assessed eight euro area countries as having achieved their medium-term budgetary objectives (MTOs) in 2016.[28] This favourable development will help bolster the government budgets of these countries and reduce their government debt over the medium term, making their economies more resilient to adverse economic developments. On the other hand, in a number of other countries structural adjustments are falling short of the requirements of the SGP, despite improving economic conditions. This is delaying the achievement of MTOs and the building of fiscal buffers, which is particularly problematic for countries with high levels of government debt. These countries currently record underlying budgetary positions that tend to be farthest from their MTOs (see table). Looking ahead, such countries risk being constrained in using fiscal policy in a stabilising manner during the next downturn and may even need to revert to pro-cyclical tightening of budgetary policies. Possible increases in interest rate levels could exert additional budgetary pressures.

The Commission's country-specific recommendations highlight risks of non-compliance with the structural adjustment requirements of the SGP in several euro area countries. According to the European Commission, neither

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27 The adoption of the country-specific recommendations by the Economic and Financial Affairs Council (ECOFIN Council) at the meeting scheduled for 11 July will formally conclude the 2017 European Semester.

28 For a definition of MTOs, see the box entitled "The effectiveness of the medium-term budgetary objective as an anchor of fiscal policies", *Economic Bulletin*, Issue 4, ECB, 2015.

France nor Spain, the countries with a deficit above the reference value of 3% of GDP in 2016, are expected to deliver a noticeable structural adjustment over the period 2017-18, i.e. a reduction of their budget deficit through factors other than the impact of the economic cycle and temporary budgetary measures. Moreover, significant shortfalls vis-à-vis structural adjustment requirements are anticipated in some countries that are currently under the SGP's preventive arm and have not yet reached their MTOs. This comes at a time when these structural adjustment requirements have been lowered markedly for some countries in order to cater for a number of factors, including structural reforms, additional government investment and pension reforms, as well as costs incurred for hosting refugees and additional security spending. Overall, this flexibility could reduce the requirements for countries to progress towards their MTO from, on average, an adjustment of around ½% of GDP to one of around ¼% of GDP in 2017.[29] Nevertheless, these countries are expected to conduct expansionary fiscal policies of, on average, 0.3% of GDP, i.e. policies that further deteriorate their structural balance.

The Commission's fiscal policy recommendations depart from those in the past in two respects. First, only the recitals of the recommendations, rather than the enacting parts, specify the size of the structural adjustment that the Council recommends governments make to ensure full compliance with the SGP. It is usually the enacting parts that should provide clear ex-ante guidance to governments on how to conduct public finances over the next 12-18 months. They also serve as a guide to parliaments and the general public and as a reference for transparent ex-post assessments of compliance with the SGP. It is therefore important that the fiscal guidance is fully incorporated, including in governments' draft budgetary plans for 2018, in order to ensure sufficient progress towards sound public finances. Second, for all countries with structural adjustment requirements of 0.5% of GDP and above in 2018, irrespective of their level of government debt, the recitals state that "the assessment of the 2018 Draft Budgetary Plan and subsequent assessment of 2018 budget outcomes will need to take due account of the goal to achieve a fiscal stance that contributes to both strengthening the ongoing recovery and ensuring the sustainability of [the respective Member State's] public finances". This could imply reductions in structural adjustment requirements over and above those granted under the existing flexibility provisions in the SGP (as communicated by the Commission in January 2015).[30] Going forward, it is important that a consistent implementation of the rules-based SGP is ensured.

29 This excludes countries that have already achieved their MTO.

30 See the Commission's Communication on making the best use of the flexibility within the existing rules of the SGP.

Table

Structural adjustment requirements under the SGP for the period 2017-18

	Medium-term budgetary objective	2016	2017		2018	
		Structural balance*	Change in structural balance*	Structural adjustment requirement in CSR	Change in structural balance*	Structural adjustment requirement in CSR
SGP preventive am						
Belgium	0.0	-2.2	0.6	0.6	-0.3	0.6
Germany	-0.5	0.8	-0.2	at MTO	-0.3	at MTO
Estonia	-0.5	0.2	-0.6	at MTO	-0.4	at MTO
Ireland	-0.5	-1.7	0.6	0.6	0.8	0.6
Italy	0.0	-1.7	-0.2	0.6	-0.3	0.6
Cyprus	0.0	0.9	-1.1	at MTO	-0.2	0.2
Latvia	-1.0	-0.8	-0.7	at MTO	-0.9	-0.3
Lithuania	-1.0	-0.2	-0.7	at MTO	-0.2	at MTO
Luxembourg	-0.5	2.0	-1.6	at MTO	-0.2	at MTO
Malta	0.0	0.4	0.0	at MTO	0.2	at MTO
Netherlands	-0.5	0.7	-0.4	at MTO	0.2	at MTO
Austria	-0.5	-1.0	0.0	0.3	0.1	0.3
Portugal	0.25	-2.0	-0.2	0.6	-0.1	0.6
Slovenia	0.25	-1.7	-0.1	0.6	-0.5	1.0
Slovakia	-0.5	-1.5	0.1	0.5	0.5	0.5
Finland	-0.5	-0.9	-0.5	-0.5	0.0	0.1
SGP corrective arm						
Spain (EDP deadline 2018)	0.0	-3.5	0.1	0.5	0.0	0.5
France (EDP deadline 2017)	-0.4	-2.5	0.2	0.9	-0.5	0.6

Source: European Commission's Spring 2017 Economic Forecast (*) and country-specific recommendations.
Notes: In this table, the structural adjustment requirements are those recommended in the country-specific recommendations (CSRs). For some countries under the preventive arm these have been reduced following the granting of flexibility to cater for the implementation of structural reforms, additional government investment, etc. For other countries, these requirements can still be lowered if such flexibility is granted ex post. The expression "at MTO" reflects the fact that, according the European Commission's forecast, countries are at their MTO at the beginning of the year in question. Structural adjustment requirements can be higher for countries subject to the debt rule. EDP refers to excessive deficit procedure.

On 22 May the European Commission also issued recommendations regarding the implementation of the SGP. The Commission recommended abrogating the excessive deficit procedure (EDP) for Portugal by its 2016 deadline, and the Council adopted a corresponding decision on 16 June. Moreover, in reports prepared under Article 126(3) of the Treaty on the Functioning of the European Union, the Commission examined the breach of the debt criterion in Belgium and Finland in 2016 and decided against opening an EDP. In the case of Finland, the breach of the government debt reference value by 3.6% of GDP was explained by mitigating factors, including the provision of financial support to other euro area countries to safeguard financial stability and the negative impact of the economic cycle. As regards Belgium, the Commission concluded that, for 2016 and 2017 taken together, the country was considered to be at risk of non-compliance with the requirements of the preventive arm of the SGP. The analysis nevertheless suggested that the debt criterion should be considered as currently complied with given that the projected deviation could still be corrected in 2017. As regards Italy, the decision on opening a debt-based EDP was postponed. The Commission envisages reassessing Italy's compliance with the debt criterion based on the draft budgetary plan for 2018 and the Commission's Autumn 2017 Economic Forecast. In general, applications of the

SGP's debt rule which are based on compliance with the preventive arm over the medium term and on data validated ex post risk unduly delaying final decisions on whether or not to open debt-based EDPs. In the meantime shortfalls in structural adjustments vis-à-vis the SGP's requirements could further increase debt sustainability risks. Going forward, the assessment of compliance with the debt criterion should be further clarified, based on clearly quantifiable factors, to ensure an effective implementation of the SGP's debt rule.[31]

To conclude, the SGP has seen frequent amendments and interpretations over time and has thus become very complex. This makes the consistent application of the rules across countries and over time more difficult. At the same time, any fiscal framework is as good as its enforcement. In this regard, the full, legally sound and consistent application of the rules of the Stability and Growth Pact is the joint responsibility of the European Commission and the Council. It is of high importance for the credibility of the Pact.

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

8 The fiscal compact: the Commission's review and the way forward

In response to the sovereign debt crisis, the fiscal compact was set up to foster budgetary discipline and increase national ownership of the fiscal governance framework. This was to be achieved by anchoring in national legislation the principles of sound fiscal policies set out in the Stability and Growth Pact and by ensuring that institutions are in place to support a well-informed national political debate on these issues.

To achieve these objectives, the fiscal compact[32] obliges participating countries to commit legally to a balanced budget rule and to set up institutions to monitor adherence to this rule. The balanced budget rule, which should preferably be enshrined at the constitutional level, is deemed to be respected if a country's structural balance is in line with its country-specific medium-term objective (MTO).[33] Countries which have not yet achieved their MTO should ensure rapid convergence towards it. In the event of significant deviations from the rule, a correction mechanism at the national level should automatically be triggered. With respect to the latter, the Commission has proposed common principles, which, inter alia, specify the nature, size and time frame of the corrective action.[34] Regarding the institutional monitoring, the governments bound by the fiscal compact have committed to set up national independent fiscal institutions (referred to as fiscal councils) to monitor compliance with the rules. These institutions should also play a role in the activation of the correction mechanism in the event that countries deviate from the rule.[35] Moreover, in line with the common principles, national authorities should adhere to the "comply or explain" principle when responding to the assessments made by the fiscal councils, i.e. they should either follow the latter's advice or publicly explain why they are departing from it. The fiscal compact supplements other recent amendments to strengthen the fiscal governance framework at the national level, such as the directive on national budgetary frameworks and the "two-pack" regulations.[36]

The European Commission published its review of the transposition of the fiscal compact into national legislation in February this year, three years after the transposition deadline (1 January 2014).[37] The Commission's review is crucial, as, if a contracting party is found not to have complied with the transposition

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32 The fiscal compact is part of the Treaty on Stability, Coordination and Governance in the Economic and Monetary Union (TSCG). The TSCG entered into force on 1 January 2013, with a one-year deadline for its transposition into national legislation. It is an intergovernmental treaty, signed by 25 countries (the "contracting parties") of which 22, namely the 19 euro area countries plus Bulgaria, Denmark and Romania, are formally bound by the fiscal compact.

33 See also the article entitled "A fiscal compact for a stronger economic and monetary union", *Monthly Bulletin*, ECB, May 2012 and the box entitled "Main elements of the fiscal compact", *Monthly Bulletin*, ECB, March 2012.

34 See the Commission's communication on the common principles.

35 In the "two-pack" regulations, the tasks of the independent fiscal institutions are further specified and include producing, or at least endorsing, the macroeconomic projections used for the budgetary plans.

36 See the directive on national budgetary frameworks and the relevant "two-pack" regulation.

37 See the Commission's review of the fiscal compact transposition.

requirements, the matter may be brought before the European Court of Justice. Moreover, a country could face a penalty payment of up to 0.1% of GDP if it does not respect the Court's judgement within a set period.

According to the Commission's review, all countries have complied with the requirements. However, in some cases the positive assessment is subject to the future adoption of complementary or amended provisions. The review focuses, for each country, on (i) the legal status of the provisions, (ii) the formulation of the balanced budget rule, (iii) the correction mechanism, and (iv) the set-up of the independent fiscal council. Regarding the legal status of the provisions and the formulation of the balanced budget rule, the Commission finds that "all contracting parties have significantly adapted their national fiscal frameworks as a result of the fiscal compact requirements", notwithstanding national differences. In particular, all contracting parties are found to have put in place a binding balanced budget rule (although only some at the constitutional level) and to have set the lower deficit limit at -0.5% of GDP. However, countries differ in how they aim to ensure rapid convergence towards their respective MTOs. In some countries the definitions of exceptional circumstances, which enable the application of escape clauses, seem broader than in the Stability and Growth Pact. The Commission's review also points to differences regarding the automaticity of the correction mechanism and the scope of the required corrective action. As regards the fiscal councils, the Commission confirmed that their mandate to monitor rule compliance and their institutional set-up were enshrined in legislation, although with varying degrees of detail.

The Commission's overall positive assessment contrasts with the fact that the fiscal compact has been only partially transposed in many countries. The Commission's assessment of "being compliant" is, for several countries, conditional on formal commitments by the national authorities either to implement remaining parts of the fiscal compact or to ensure that they will be fully complied with in the future. Commitments are, however, not an adequate substitute for legal provisions, as they are not enforceable. Formal commitments have been made with regard to the balanced budget rule by the authorities of Denmark, France, Cyprus, Lithuania, the Netherlands and Romania (see table). Moreover, a large number of countries, namely Belgium, Denmark, Greece, Spain, France, Italy, Luxembourg, Austria, Portugal and Slovakia, have not yet formally integrated an unconditional "comply or explain" principle into their legal frameworks. Instead, they have only promised to respect the principle or to amend their legal provisions. Furthermore, regarding the correction mechanism, France's provisions governing the substance of the mechanism and Latvia's definition of the escape clause allow for some scope for flexibility. Finally, the Commission concurred with the set-up and design of the monitoring institutions, although in some countries, namely Belgium, Denmark, Spain, France, Luxembourg and the Netherlands, their independence was not found to be fully ensured by national legislation.

Table

Overview of the "conditioning factors" referred to in the Commission's review of compliance with the fiscal compact

	balanced budget rule	correction mechanism	fiscal council	comply/explain principle
formal commitments	DK, FR, CY, LT, NL, RO	FR, LV	DK, ES, FR, LU, NL	DK, ES, FR, IT, LU, AT, PT, SK
clarifications		BE, DK, IT, LT, LU	LT, NL, PT	
legal amendments			BE	BE, GR
actions to be taken			SI	

Source: European Commission.
Notes: The "conditioning factors" (formal commitments, clarifications by the national authorities on the interpretation of certain legal provisions, promised legal amendments and actions to be taken) refer to those parts of the fiscal compact which have not yet been transposed into national legislation but which the national authorities have promised to fully comply with in the future. Since the publication of the review, Slovenia has taken action by appointing the members of the newly established monitoring institution.

Overall, the slow and incomplete transposition of the fiscal compact is disappointing. It signals a clear risk that the intended anchoring of sound fiscal policy rules at the national level may not materialise. In combination with an implementation of the EU fiscal framework which may be perceived as not sufficiently complete, this could contribute to undermining the credibility of sound fiscal policymaking.

As a follow-up to the review, it will be important to closely monitor whether the authorities fulfil their commitments. The Commission's review focuses on the question of whether the main elements of the fiscal compact are sufficiently enshrined in national provisions. Neither their practical implementation nor their effectiveness are discussed. Looking ahead, it would be valuable to thoroughly assess the effectiveness of the fiscal compact.[38] Such effectiveness, realised in the form of better budgetary discipline, can only be ensured if and when countries fully adhere to the agreed commitments contained in the fiscal compact.

[38] This will also be important for the question of whether to integrate the main elements of the fiscal compact into EU legislation – an option foreseen in the TSCG.

Article

1 Domestic and global drivers of inflation in the euro area

This article discusses the role of domestic and global drivers of inflation in the euro area and whether and how their relative importance has changed over time. Domestic price pressures result mainly from wage and price-setting behaviour, which is closely linked to the domestic business cycle. In respect of external drivers, import prices – especially of commodities – naturally play an important role in the development of domestic headline inflation, for example via energy and food inflation. However, more recently it has been argued that global integration has increased the influence of the global business cycle on domestic inflation and thereby also supported a convergence of inflation developments across the globe. While inflation developments have indeed increasingly shown a common pattern since the early 1990s, this commonality can to a large extent be explained by a change in monetary policy orientation and global commodity price developments. As concerns the effects of globalisation, the theoretically appealing idea that domestic wage and price pressures are increasingly affected by global developments via higher integration and increasing contestability of labour and product markets is difficult to capture empirically. In this respect we find, for example, only limited support for including measures of global slack and of the integration in global value chains in Phillips curve analyses of inflation in the euro area.

1 Introduction

Over the medium term, the overall rate of inflation in an economy is determined by its central bank's monetary policy. However, over the short term, inflation outcomes are influenced by domestic and external cost and price shocks. On the domestic side, inflation outcomes are typically affected by the balance between aggregate domestic demand and supply, with inflation expectations playing a key role. On the external side, inflation is affected mainly by demand and supply fluctuations in the global economy, which affect the prices of tradable goods, particularly commodities, but also exchange rate developments.

There are a number of reasons why global factors may recently have been playing a more prominent role in shaping domestic inflation dynamics. One argument is that globalisation has made national inflation less responsive to domestic capacity constraints. There are two possible theories for this conclusion: either any sudden expansion in demand for goods would translate into higher imports rather than higher prices; or foreign competition would constrain wage or price increases in industries open to global competition, lowering the sensitivity of wages to domestic demand pressures. It is in this context that China's integration in the global economy, as discussed in Box 1, has played a central role. Another argument emphasises the role of credible monetary policies that stabilised inflation expectations and trend inflation across advanced and many emerging economies

and reduced the volatility of inflation developments and the level of inflation.[39] Based on the reduced volatility and the lower level of inflation, proportionally more of the variation in national inflation rates would be explained by inflation developments linked to exogenous global price shocks, such as commodity price changes.

In the literature the concept of "global inflation" has come to the fore. This is the notion that domestic inflation rates have converged because of the increased influence of global developments on domestic inflation. One strand of the literature on global inflation has focused on the common – or global – component in national inflation rates and what role it has played in domestic inflation developments.[40] A second strand has emphasised the importance of global output gaps and integration in global value chains (GVCs) as a determinant of national inflation processes.[41]

Against this background the article discusses the role played by domestic and external factors with regard to inflation and whether their relative importance has changed over time. The article is structured as follows: the following section discusses the domestic and global drivers of inflation. Section 3 discusses commonalities in inflation developments across the globe. The relative importance of domestic and global factors in the development of euro area inflation after the crisis is analysed in Section 4. Section 5 discusses whether globalisation has changed the importance of global slack for the modelling of domestic inflation based on Phillips curves. The last section concludes.

2 Domestic and external drivers of inflation

In the medium term, inflation expectations play a key role in the achievement of a central bank's inflation target. Inflation expectations that are firmly anchored in line with the inflation target support the achievement of that goal by guiding wage and price-setting decisions in the economy. Deviations of inflation expectations from

39 See also Beechey, M.J., Johannsen, B.K. and Levin, A.T., "Are Long-Run Inflation Expectations Anchored More Firmly in the Euro Area Than in the United States?", *American Economic Journal: Macroeconomics*, Vol. 3, No 2, 2011, pp. 104-129.

40 Ciccarelli and Mojon note significant co-movement in inflation rates across countries and find that models which include a measure of global inflation consistently improve benchmark national inflation forecasts. They conclude that inflation should be modelled as a global rather than a national phenomenon: see Ciccarelli, M. and Mojon, B., "Global Inflation", *The Review of Economics and Statistics*, Vol. 92, No 3, August 2010, pp. 524-535.

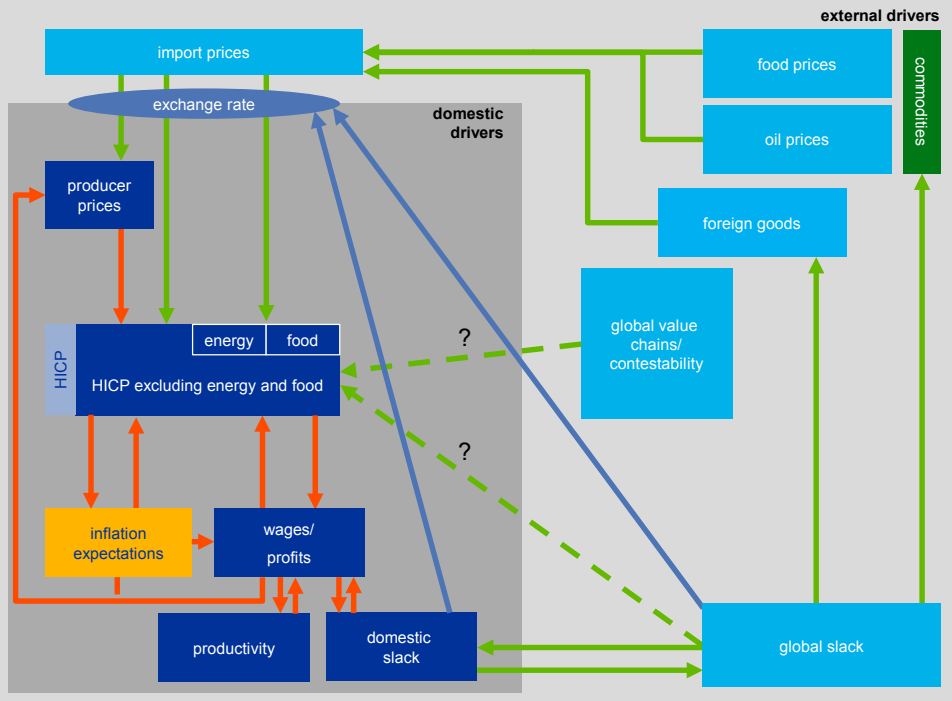
41 Borio and Filardo, for example, argue that proxies for global economic slack add considerable explanatory power to traditional benchmark inflation equations and that the role of global factors has been growing over time. In follow-up work, Auer, Borio and Filardo link directly what they call the "globalisation of inflation" to the growing integration of the global supply network. See Borio C. and Filardo, A., "Globalisation and inflation: New cross-country evidence on the global determinants of domestic inflation", *BIS Working Papers*, No 227, 2007; Auer, R., Borio, C and Filardo, A., "The globalisation of inflation: the growing importance of global value chains", *BIS Working Papers*, No 602, 2017; and also Guerrieri, L., Gust, C. and López-Salido, J.D., "International Competition and Inflation: A New Keynesian Perspective", *American Economic Journal: Macroeconomics*, Vol. 2, No 4, 2010, pp. 247-280.

the inflation target may become self-reinforcing.[42] The anchoring of inflation expectations is hence a core task for monetary policy.

In the short term, fluctuations in inflation are affected by both domestic and external developments. The following part discusses the main drivers of inflation on the domestic as well as on the external side. Chart 1 gives a stylised overview of the drivers of inflation in terms of the harmonised index of consumer prices (HICP). The HICP, which is the benchmark indicator for the price stability target of the ECB, is based on a broad basket of goods and services. The main components of the consumption basket used to calculate the HICP are commonly grouped into energy, food, services and non-energy industrial goods (NEIG). HICP inflation excluding energy and food, which consists of services and NEIG inflation, is one measure of underlying inflation.

Chart 1

Domestic and external drivers of inflation – stylised overview



Source: ECB illustration. The red arrows reflect domestic drivers of inflation, the green arrows external drivers. Blue arrows illustrate that global and domestic slack are important drivers of exchange rate developments. The dashed green lines reflect the hypotheses discussed in this article – namely that GVCs and global slack have a direct influence on euro area inflation.

On the domestic side, price pressures are largely determined by developments in unit labour costs and profit margins. Wages are an important input cost factor for domestic production. In services, which have a weight of two-thirds in HICP inflation excluding energy and food, wages account for the lion's share of around 50% of input costs and are also an important cost factor for NEIG, with a share of

[42] For more details see, for example, the discussion in Ciccarelli, M. and Osbat, C., "Low inflation in the euro area: Causes and consequences", *Occasional Paper Series*, No 181, ECB, 2017; and Busetti F., Delle Monache, D., Gerali, A. and Locarno, A., "Trust, but verify. De-anchoring of inflation expectations under learning and heterogeneity", *Working Paper Series*, No 1994, ECB, 2017.

around 20%. To the extent that wages increase more strongly than productivity, they push up unit labour costs and thereby increase cost pressures for firms, which may then feed through to producer prices and, ultimately, consumer prices. The strength of this pass-through depends crucially on profit margin developments, which are closely linked to the pricing power of firms. This pricing power is determined by structural factors, such as the degree of competition and barriers to entry, but varies also cyclically with the ebb and flow of demand.

Domestic price pressures are driven by the domestic business cycle. Unemployment moves with the cycle and low labour market slack tends to put upward pressure on wage growth.[43] In a similar vein excess demand in economic upturns allows firms to increase their margins, whereas sluggish demand in economic downturns is often accompanied by a reduction in margins, as firms freeze or reduce their prices (in order to maintain their sales) or do not pass on higher input costs (in order not to lose market shares).[44] The development of profit margins and wages also has important feedback effects on demand via investment decisions of firms and consumption decisions of households, which in turn affect again the likelihood of increases in wages and profit margins. Domestic price pressures can be measured by, for example, the sum of unit labour costs and of unit profits, which is a measure of the costs of domestic production.[45] Chart 2 illustrates the cyclical behaviour of domestic price pressures, which have closely followed the business cycle in the euro area.

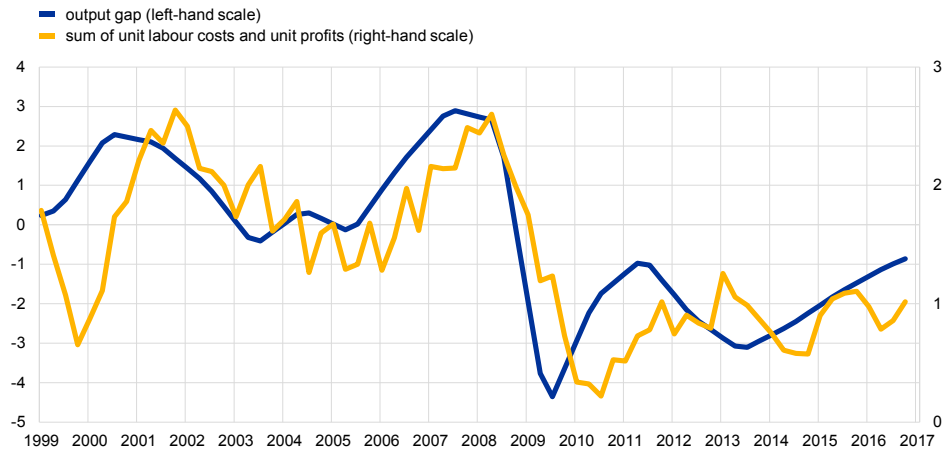
43 See, for example, the box entitled "Recent wage trends in the euro area", *Economic Bulletin*, Issue 3, ECB, 2016; and the article entitled "The Phillips curve relationship in the euro area", *Monthly Bulletin*, ECB, July 2014.

44 See the box entitled "Trends in profit margins of euro area non-financial corporations", *Economic Bulletin*, Issue 1, ECB, 2015.

45 Unit labour costs are measured as the average cost of labour per unit of output, while unit profits are defined as gross operating surplus per unit of real GDP. Gross operating surplus is defined as GDP minus compensation of employees minus indirect taxes. See the box entitled "What accounts for the recent decoupling between the euro area GDP deflator and the HICP excluding energy and food?", *Economic Bulletin*, Issue 6, ECB, 2016 for a discussion of the factors that affect the GDP deflator and the HICP.

Chart 2

Development of domestic price pressures in the euro area over the business cycle



Sources: Eurostat and European Commission.
Notes: The series "sum of unit labour costs and unit profits" reflects the development of the GDP deflator, excluding the impact of unit taxes. The latest observation is for the fourth quarter of 2016.

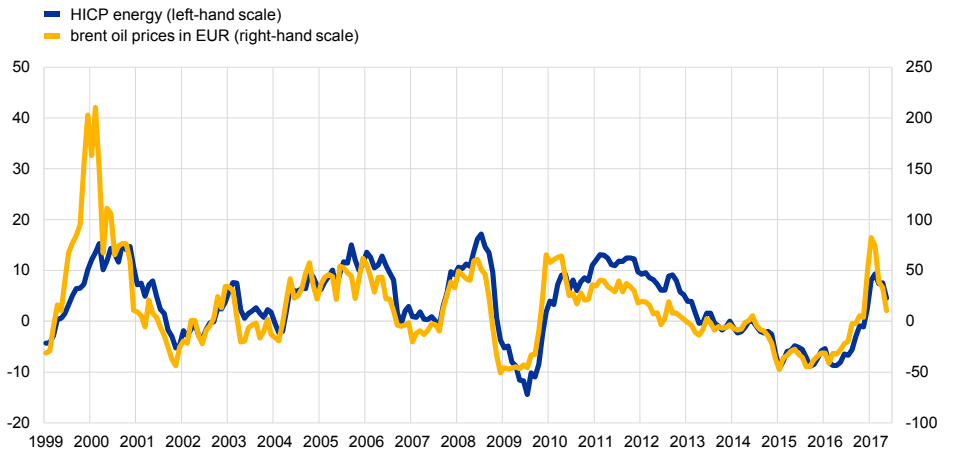
Turning to the external drivers of inflation, import prices for commodities as well as for intermediate and final goods have a considerable impact on domestic inflation via direct and indirect effects.[46] For example, oil prices feed directly on energy inflation and imported final goods feed directly on NEIG inflation. Import prices of commodities and intermediate goods also have indirect effects on producer prices via higher input costs, which then feed through the pricing chain.

Commodity prices, as with oil and food prices, are especially important in shaping headline inflation developments. Global factors in domestic inflationary developments are most clearly felt via the impact of oil prices on energy inflation. Energy inflation in the euro area, accounting for around 10% of the consumer goods basket used to measure the HICP, is linked fairly closely to the development of crude oil prices, which are determined on global markets (see Chart 3). Food prices in the euro area are affected by the Common Agricultural Policy and the fact that some markets can be influenced by regional factors such as regulation or health scares; however, global demand and supply forces nonetheless play an important role. Food inflation accounts for around 19% of the HICP goods basket and is somewhat volatile as it is also directly affected by weather events around the globe. As shown in Chart 4, domestic food prices tend to correlate with developments in international food price inflation with some time lag.

[46] See for example the box entitled "The role of global factors in recent developments in euro area inflation", *Monthly Bulletin*, ECB, June 2014.

Chart 3

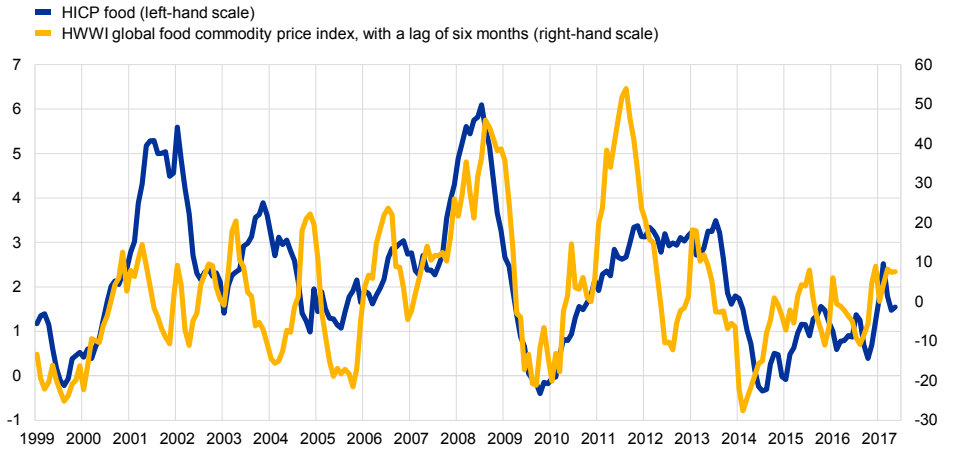
Oil prices and HICP energy inflation



Sources: Eurostat, BIS and Bloomberg.
Note: The latest observation is for May 2017.

Chart 4

HICP food inflation and global food price indices



Sources: Eurostat, Hamburg Institute of International Economics (HWWI) and Bloomberg.
Notes: The latest observation is for May 2017. The strong divergence of the HICP food inflation and the HWWI global food commodity price index between 2001 and 2003 was the result of strong price increases for meat, caused by the bovine spongiform encephalopathy (BSE) epidemic – commonly known as mad cow disease. In 2011 soaring crop prices, which have a relatively high weight in the HWWI global food commodity price index, passed only partially through to euro area food prices.

Import prices also play an important role in relation to underlying inflation. One channel works via directly imported goods. This is especially relevant for NEIG, of which around 15% are estimated to be directly imported consumer products. Changes in commodity prices also feed through, with some lag, to underlying inflation; this occurs, for example, via the effects of higher import prices for oil on production costs. Such indirect effects[47] are obvious in relation to some HICP

[47] For a discussion of this topic, see the box entitled "Indirect effects of oil price developments on euro area inflation", *Monthly Bulletin*, ECB, December 2014.

services items, such as transportation services (e.g. aviation), where fuel is a major cost factor. They also affect the prices of NEIG and services that are produced with relatively high oil or energy intensity, such as some pharmaceutical products and some materials used for household maintenance and repair. Finally, import price shocks can lead to second-round effects if their inflationary impact influences wage and price-setting behaviour, which then feed through again to inflation.

The exchange rate has an important role at the juncture between the external and domestic economic environments. As shown in Chart 1, the exchange rate moderates or amplifies the transmission of foreign costs and prices into domestic ones. However, it should be noted that the effects of exchange rate fluctuations on inflation in the euro area depend on a variety of factors, including the macroeconomic environment, factors affecting pricing decisions at the firm level and the shocks driving the exchange rate movements.[48]

Does foreign slack play a direct role in domestic inflation? The traditional view is that global slack does affect domestic inflation, albeit indirectly. First, global slack has considerable influence on commodity prices, which then affects domestic inflation via import prices for commodities. Second, foreign output gaps matter for short-run inflation dynamics by affecting import prices for these goods. Third, global cyclical conditions affect the domestic output gap indirectly, since stronger global demand for goods and services supports domestic income via the net exports channel. However, the effect that global slack has on domestic inflation may in fact be more direct, as suggested by the "global slack" view[49]. This view stresses that the range of products that can be traded has broadened and that goods produced in different countries are often close substitutes. This is increasingly also affecting services, which in many instances have become more tradable. Moreover, factor input markets are closely integrated globally due to capital mobility and increasingly similar labour supply characteristics across the globe. In addition, the geographical relocation of production and the fragmentation of production processes into their constituent components have been facilitated by advances in communications technology and the gradual breakdown in trade and financial regulatory barriers.[50] Another important aspect is that there was also a major longer-term increase in the production potential of the global economy – for example by the integration of China, which plugged an enormous additional labour force, both directly and indirectly, into the global economic system.[51] Based on all these factors, the global slack view argues that in the case of tradable goods and services, what is decisive is no longer solely the domestic tightness or slack of economic conditions, but the global

48 For the sake of simplicity, the effects of foreign commodity and goods prices are analysed based on import prices in euro, and the role of exchange rate developments in the transmission process is not discussed explicitly in this article. For more details on this topic, see the article entitled "Exchange rate pass-through into euro area inflation", *Economic Bulletin*, Issue 7, ECB, 2016.

49 As propounded by Borio and Filardo and Milani: see Milani, F., "Global Slack and Domestic Inflation Rates: A Structural Investigation for G-7 Countries", Federal Reserve Bank of Dallas, *Working Paper*, No 33, 2009.

50 Scheve, K. and Slaughter, M., "Economic insecurity and the globalization of production", NBER Working Paper, No 9339, 2002.

51 Freeman, R., "Labor Goes Global: The Effects of Globalization on Workers Around the World", transcript of the 2004 Eighth Annual Rocco C. and Marion S. Siciliano Forum: Considerations on the Status of the American Society, 2005. See also the discussion in Box 1.

tightness or slack as well, because local demand and supply conditions for a given tradable good or service can to varying degrees be offset elsewhere. In effect this could lead to domestic inflation being increasingly sensitive to global slack.

Does integration in GVCs affect the role that foreign slack plays in domestic inflation? Recent research suggests that the direct role of foreign slack in domestic inflation depends on integration into GVCs. The increasing role of GVCs has been facilitated by innovations in information and communication technology; such technology makes it possible to coordinate and track just-in-time production at different production stages by different firms around the globe and to shift firm-specific know-how across borders. These GVCs are also increasingly covering business services. Auer, Borio and Filardo[52] argue that integration in GVCs further boosts the ability of firms to substitute various production stages across borders via offshoring and outsourcing. This in turn increases the degree of contestability of domestic labour markets as, for example, unions are aware of the credible threat that some production stages may be outsourced to other countries. Such a scenario also makes unions and employers take foreign available production capacity into account in wage negotiations. Moreover, GVC integration also increases the importance of inputs produced abroad, whose prices depend strongly on foreign slack. It is argued that in effect the more the various stages of production take place in intricate networks spanning many countries, the more that external factors and supply conditions elsewhere will tend to have an impact on wage and price-setting decisions of firms; consequently this will also have an impact on the development of domestic inflation.[53]

3 Commonality in the development of inflation across the globe

Since the late 1990s developments in inflation have increasingly led to a common pattern across the globe being observed. In the last two decades a synchronisation of inflation developments can be seen across a large group of advanced and emerging economies. Euro area inflation has also been very strongly correlated with inflation in the countries of the Organisation for Economic Co-operation and Development (OECD) with two exceptions: from 1999 to 2002, when there was a period of low inflation following the introduction of the euro;[54] and, to a lesser extent, between 2014 and 2015 (see Charts 5 and 6).

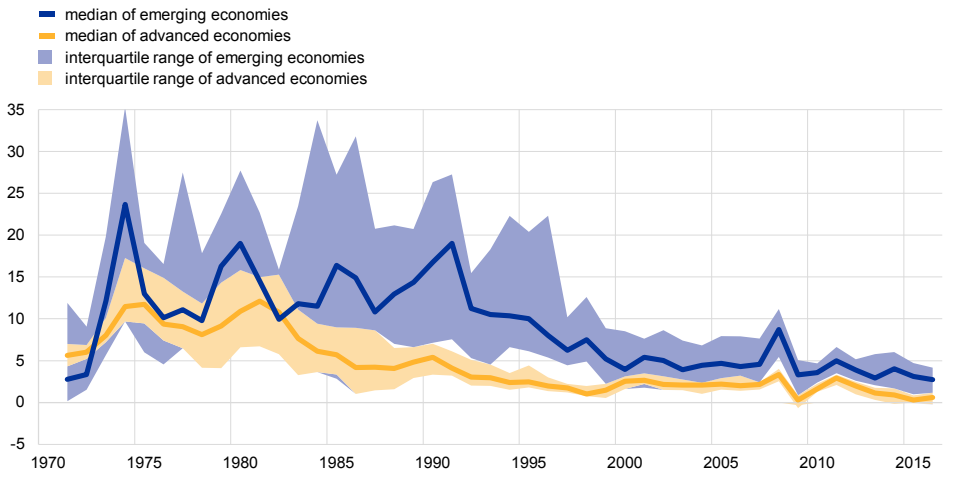
52 Auer, R., Borio, C and Filardo, A., "The globalisation of inflation: the growing importance of global value chains", *BIS Working Papers*, No 602, 2017.

53 See also the article entitled "The impact of global value chain participation on current account balances – a global perspective", *Economic Bulletin*, Issue 2, ECB, 2017.

54 See the article entitled "Inflation differentials in the euro area during the last decade", *Monthly Bulletin*, ECB, November 2012.

Chart 5

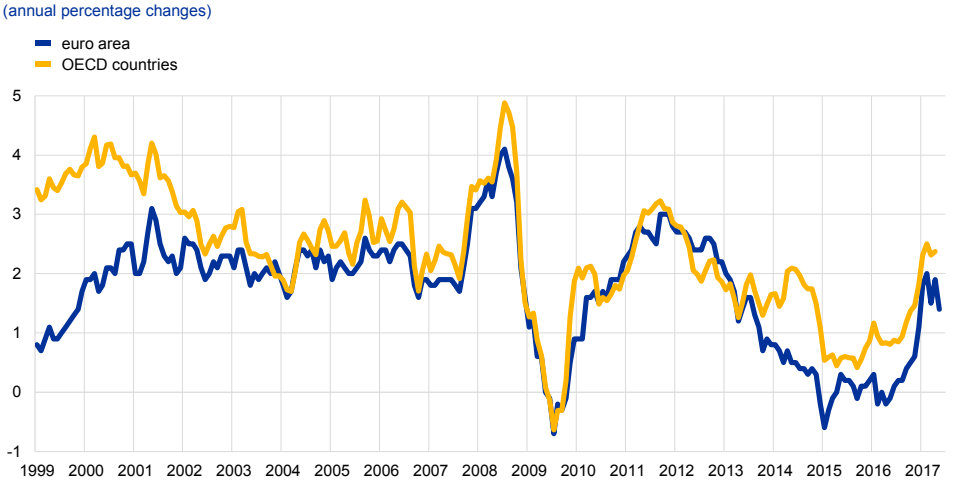
Range of inflation rates in advanced and emerging economies



Source: Haver.
Notes: The interquartile range covers 50% of the samples of emerging and advanced economies. The sample includes 17 advanced economies (Australia, Austria, Belgium, Canada, France, Germany, Greece, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United States) and 24 emerging economies (Bolivia, Chile, Colombia, Côte d'Ivoire, Ecuador, Egypt, El Salvador, Guatemala, Honduras, Indonesia, Israel, Jamaica, South Korea, Malaysia, Mauritius, Mexico, Nigeria, Paraguay, the Philippines, Singapore, South Africa, Taiwan, Tunisia, Turkey). Only countries for which data going back to 1970 are available have been included. The latest observation is for 2016.

Chart 6

Development of inflation in the euro area and in the OECD countries



Sources: OECD, Haver and Eurostat.
Notes: The latest observations are for April 2017 for the OECD countries and May 2017 for the euro area.

Since 2007 inflation has been very volatile in the euro area but also across the OECD countries on average. It included two periods of falling inflation (2008-09 and 2012 to early 2015) and a protracted period of low inflation in 2014-16 (see Chart 6). Headline inflation developments have very much been shaped by global commodity prices, with oil prices collapsing in 2008/2009 only to then recover strongly to a very high level before a period of renewed declines in 2014-16.

The strong co-movement of inflation across developed countries has fuelled a debate about whether inflation is or has increasingly become a global phenomenon and is being determined more and more by global factors. Ciccarelli and Mojon for example performed a principal component analysis; they found that inflation in 22 OECD countries has a common factor that can account for on average around 70% of the fluctuations of headline inflation in those same countries in a long sample running from 1960 to 2008. In a more recent contribution, Ferroni and Mojon[55] apply a similar approach to the same countries and find – for the shorter and more recent period 1993-2014 – global factors playing a somewhat smaller role, explaining only around half of the variance in domestic inflation by common (global) inflation.[56] They also expand the approach to underlying inflation measured in terms of headline inflation excluding food and energy. Their findings show that 40% of the variation in domestic underlying inflation in the 22 OECD countries studied can be explained by global inflation.

How significant global inflation is vis-à-vis domestic inflation seems to largely depend on the time period studied. Applying a similar methodology to that of Ciccarelli and Mojon for 40 developed and developing countries for headline inflation and 34 countries for inflation excluding food and energy over the sample 1999-2016 suggests that global factors account for around half of domestic headline inflation fluctuations (see Chart 7). However, this proportion has changed over time, with global factors playing a far stronger role in the period 2008-16 than in 1999-2007 in terms of headline inflation. Although the role of global factors in headline inflation excluding food and energy is found to be somewhat smaller, at around one quarter on average, the influence that global factors exert also seems to have been stronger more recently.

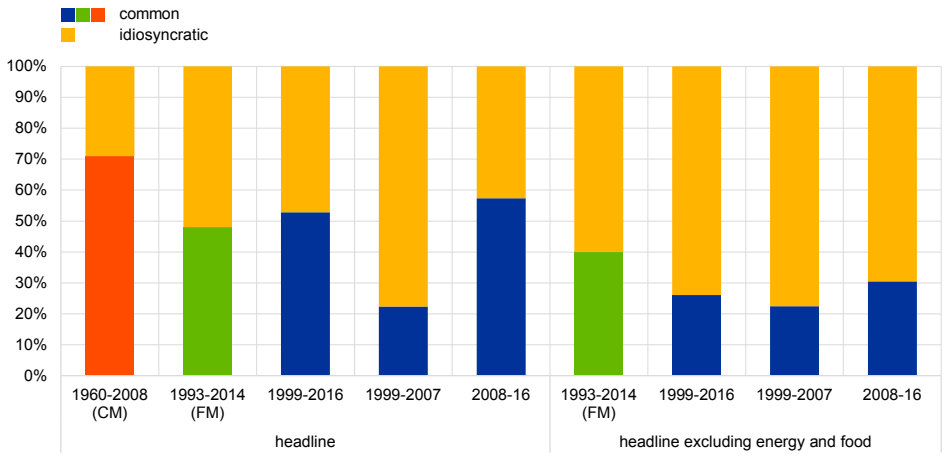
55 Ferroni, F. and Mojon, B., *Domestic and Global Inflation*, 2016, mimeo. In a forecasting exercise, Kearns, J., "Global inflation forecasts", *BIS Working Papers*, No 582, 2016 finds that for most countries global inflation does not improve the survey-based forecasts of domestic inflation. However, this may also mean that survey forecasters incorporate information on global inflation in their forecasts.

56 Parker also finds that global factors explain a large share of the variation in national inflation rates in a much larger sample of 223 countries and territories from 1980 to 2012: see Parker, M., "Global inflation: the role of food, housing and energy prices", *Working Paper Series*, No 2024, ECB, 2017.

Chart 7

The role of global factors in explaining domestic inflation based on common factor analyses

(share of variation that can be explained by common and idiosyncratic factors)



Notes: "CM" (red bar) reflects the share of common factors as calculated by Ciccarelli and Mojon. "FM" (green bars) reflects the share of common factors as calculated by Ferroni and Mojon. The other results (blue bars) are based on ECB staff estimations for 40 developed and developing countries for headline inflation, and 34 countries for headline inflation excluding food and energy.

Monetary policy orientation plays a role with regard to the commonality in inflation fluctuations across countries. The high degree of synchronisation of inflation across countries (see Chart 5) reflects a common shift in the orientation of monetary policy. The 1990s saw a common downward trend in inflation, particularly in advanced economies, and later on also in some emerging economies. This trend could be attributed to the growing focus of monetary policy authorities towards delivering price stability[57]. The effectiveness of monetary policy in anchoring domestic price expectations and in reducing the volatility of inflation developments and also the level of inflation would mean that proportionally more of the variation in national inflation rates is linked to exogenous global price shocks, such as commodity price changes.

Global commodity price movements are likely to be the main driver of the global common factor in inflation. In this respect the most important effect stems from global oil price developments, which strongly affect the development of domestic energy inflation.[58] The common influence of global oil price developments on inflation can be reinforced by the pass-through of energy to underlying inflation, to the extent that this is similar across countries. The same reasoning applies to food and other raw materials inflation, which are also strongly dependent on global commodity price developments. Chart 8 illustrates the importance of commodity prices for the global commonality of headline inflation, as around half of the variation in the common factor can be explained by movements in oil and food commodity

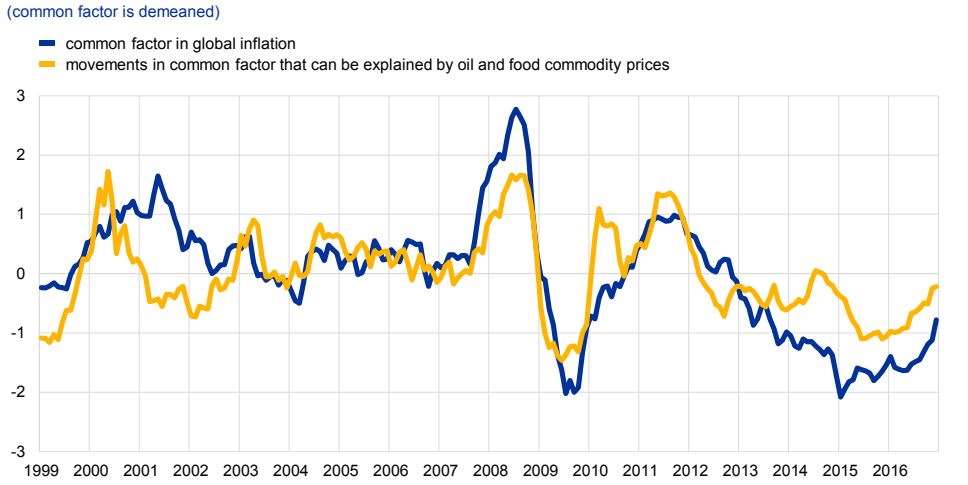
57 This occurred in the form of the spreading of "good" monetary policy concepts among central banks: see Ciccarelli, M. and Mojon, B., op. cit.

58 See for example the box entitled "The role of global factors in recent developments in euro area inflation", *Monthly Bulletin*, ECB, June 2014; and the box entitled "Oil prices and euro area consumer energy prices", *Economic Bulletin*, Issue 2, ECB, 2016.

prices. This also supports the view that the impact of global factors is changing and depends on how frequent and how large oil and food shocks are.

Chart 8

The relationship between the common factor in global inflation and commodity price developments



Notes: The blue line reflects the zero mean common factor in global inflation as derived by replicating the principal component approach of Ciccarelli and Mojon for a sample of 40 advanced and emerging economies. The yellow line reflects movements of oil and food prices weighted with the coefficients derived by a linear regression of the common factor in oil and food prices (with a lag of three months).

Commodity price cycles contribute to understanding why the importance of global factors in relation to domestic inflation changes so widely over time. Ciccarelli and Mojon's findings of the very strong influence that global factors can have seem to be partly driven by the inclusion of data from the 1970s, when central banks failed to prevent energy prices from driving up inflation across the world. This explains why analyses that apply a very similar methodology to a shorter sample – during which monetary policy across the world has been far more successful in dampening inflation swings in the face of strong commodity price movements – find that global factors have a substantially smaller effect. The role that strong energy price swings have played in shaping inflation developments after 2008, which have also fed through to underlying inflation via indirect effects, may partly explain the substantial differences in the role of global factors found in the sub-sample analyses for 1999-2007 and 2008-16 in terms of headline and underlying inflation (see Chart 7).

4 Decomposing the effects of global and domestic factors on inflation in the euro area since the crisis

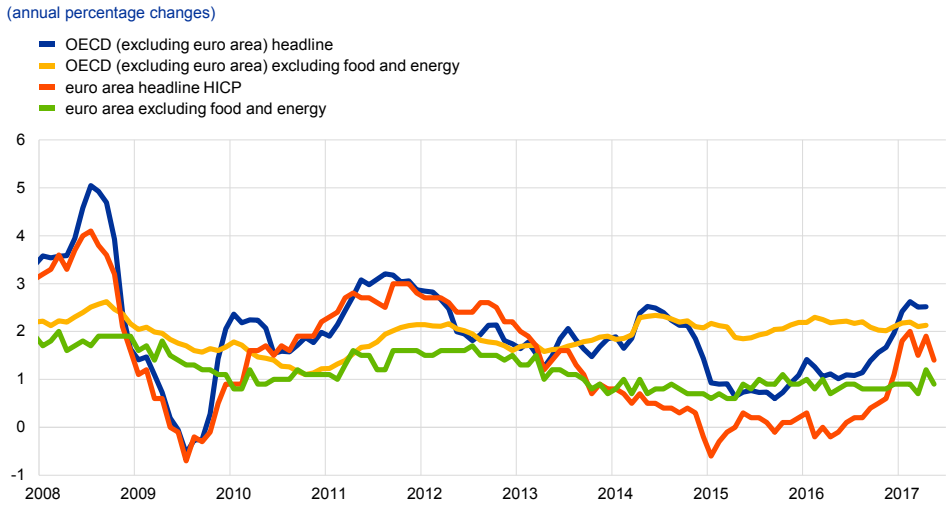
To better understand the role of global and domestic factors in euro area inflation, this section analyses the period after the crisis, disentangling the role of domestic and global factors and their relative importance over time.

Between 2008 and mid-2013, headline inflation in the euro area has shown strong co-movements with headline inflation in other advanced economies

(see Chart 9). Whereas headline inflation peaked in both the non-euro area OECD countries and the euro area in autumn 2011 and fell rapidly thereafter, after 2013 the decline was more pronounced in the euro area. In particular, while inflation dipped into negative territory several times in the euro area in 2015 and 2016, it remained positive for the OECD (excluding the euro area) aggregate. Furthermore, euro area headline inflation continued to hover around zero between end-2014 and autumn-2016.

Chart 9

Euro area and OECD inflation rates



Sources: OECD, Eurostat, and ECB calculations
Note: The latest observations are for May 2017 for the euro area and April 2017 for the non-euro area OECD countries.

Gauging the importance of global versus domestic factors in relation to developments in euro area consumer price inflation is not without its complications. First, the various factors are interrelated and affect domestic variables through multiple channels. Second, the impact of global factors on euro area consumer prices depends on how producers and/or retailers adjust their margins as a result of changes in costs. This is subject to local and international market conditions.

An attempt to assess the relevance of global factors to headline inflation developments could begin by considering the individual HICP components. Certain components, notably energy, are more sensitive to global factors than others, such as services, which are more responsive to domestic factors.

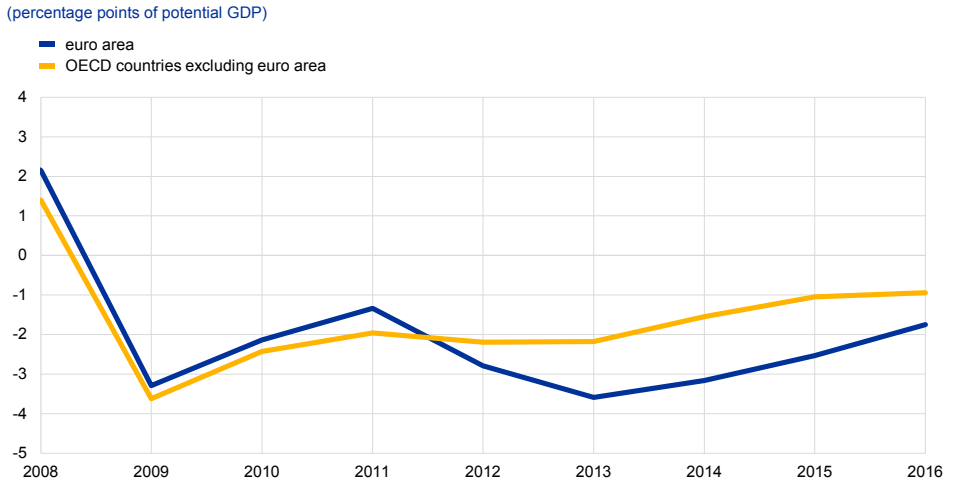
A large part of the decline in headline inflation in the euro area and the OECD countries from the end of 2011 until early 2016 has been on account of a decline in energy prices. The most recent pick-up was also mainly driven by the swing in energy prices.

A striking difference between the euro area and the other OECD countries in general is that, since 2013, lower HICP inflation excluding energy and food can explain a much more important, and more stable, part of the euro area disinflation and persistently low inflation. This points to domestic forces having a

stronger role in the euro area, and contributing to the fact that HICP inflation excluding energy and food is diverging from that of other advanced economies. HICP inflation excluding energy and food in the euro area has hovered consistently between 0.6% and 1.1% since mid-2013. As Chart 10 shows, according to OECD estimates, the OECD (excluding the euro area) and euro area output gaps were very close to each other until 2012; thereafter the difference between them widened, as the euro area experienced a more negative output gap than the rest of the OECD. The divergence in HICP inflation excluding energy and food between the euro area and other advanced economies, in other words, is largely a matter of domestic economic weakness after 2012.

Chart 10

Euro area and OECD output gaps



Sources: OECD and ECB calculations.
Note: The latest observation is for 2016.

One approach for distinguishing domestic from global forces is to identify structural shocks and quantify their relative contributions to the dynamics of inflation. This requires a model-based analysis similar to the one applied in Bobeica and Jarociński[59], whose approach is replicated and updated here. Based on that analysis, Chart 11 shows the contributions of domestic and global shocks to the deviation of euro area headline inflation from a model-based mean. Global shocks are important most of the time, but domestic shocks have had a greater effect, in particular over the period 2012-14, when inflation was falling, and more recently in explaining inflation developments. Global shocks were the principal driver in the two periods from early 2008 to mid-2009 (mainly a global demand shock) and in 2015 to

[59] Bobeica, E. and Jarociński, M., "Missing disinflation and missing inflation: the puzzles that aren't", *Working Paper Series*, No 2000, ECB, 2017. The analysis in this section is largely based on the model presented in detail in this paper. Bobeica and Jarociński's empirical model contains seven variables and seven shocks are identified and labelled using a combination of zero and sign restrictions. The variables included are the price of oil, rest-of-the-world real GDP (or the share of domestic real GDP in the world real GDP), real GDP, consumer prices, short-term interest rate, 10-year bond spread and the nominal effective exchange rate. The first two are classified as global shocks (oil supply and global demand shock), while the subsequent ones represent domestic shock. The identification relies on a timing restriction: global shocks affect all variables instantly, whereas there is a delay before domestic shocks affect global variables.

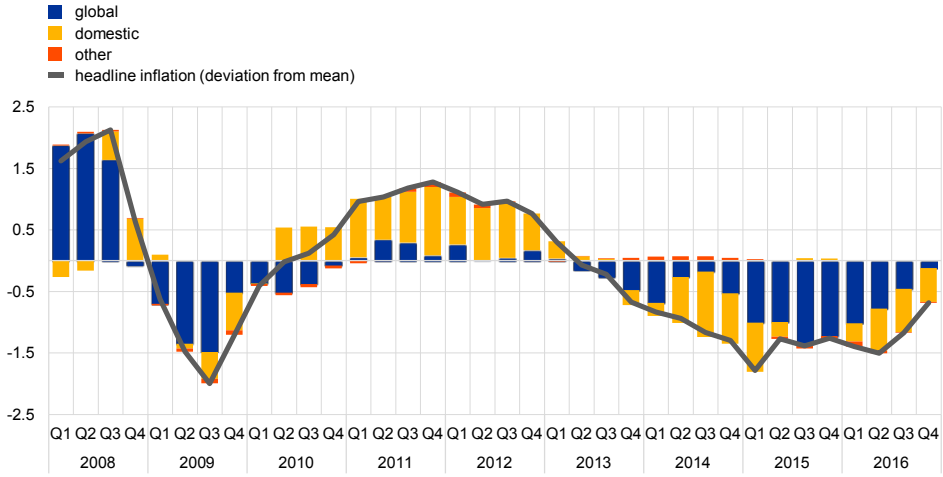
early 2016 (mainly an oil supply shock). They accounted for about 60% and 75% of the deviation respectively. Hence, global factors dominate mainly when large shocks occur that have implications for the whole world economy.

A decomposition of the driving forces of inflation in the euro area thus shows that both global and domestic shocks have played a decisive role in shaping domestic inflation. The relative importance of these shocks can also change quite substantially over time. The empirical results show that both global and domestic factors played a role in determining inflation developments in the euro area from the onset of the crisis. However, the relative importance of global and domestic forces is not so much driven by structural forces, such as globalisation, as by periodic bouts of global shocks, often reflected in large commodity price swings. The next section analyses how the "traditional" Phillips curve fares in terms of explanatory power for euro area underlying inflation developments and whether it can be improved by also taking measures of foreign slack into account.

Chart 11

Historical decomposition of headline inflation – domestic and global shocks

(annual percentage changes; deviation from mean; percentage point contributions)



Sources: Eurostat and ECB staff calculations – based on Bobeica and Jarociński.
Notes: The chart shows the percentage point contribution of different types of shocks to explain the evolution in headline inflation in the euro area. Global shocks reflect an oil supply and a global demand shock; domestic shocks reflect a domestic demand, a domestic supply, a short-term interest rate and a spread shock. A negative contribution implies that that the specific shock contributed to lowering inflation, whereas a positive contribution indicates that this shock put upward pressure on inflation. The contributions are estimated in a Bayesian vector autoregressive model containing seven variables and seven shocks (two of the shocks are global and four are domestic). For more details, see Bobeica and Jarociński.

Box 1

China's influence on inflation dynamics in advanced economies

Decelerating activity, excess capacity and falling producer pressures in China in recent years have focused interest on the role of China in shaping global inflation developments. This box uses a model-based assessment to understand the impact of developments in China on inflation dynamics in advanced economies.

The integration of China into the global economy is likely to have influenced inflation dynamics in other economies through several channels. Supply and demand channels acted

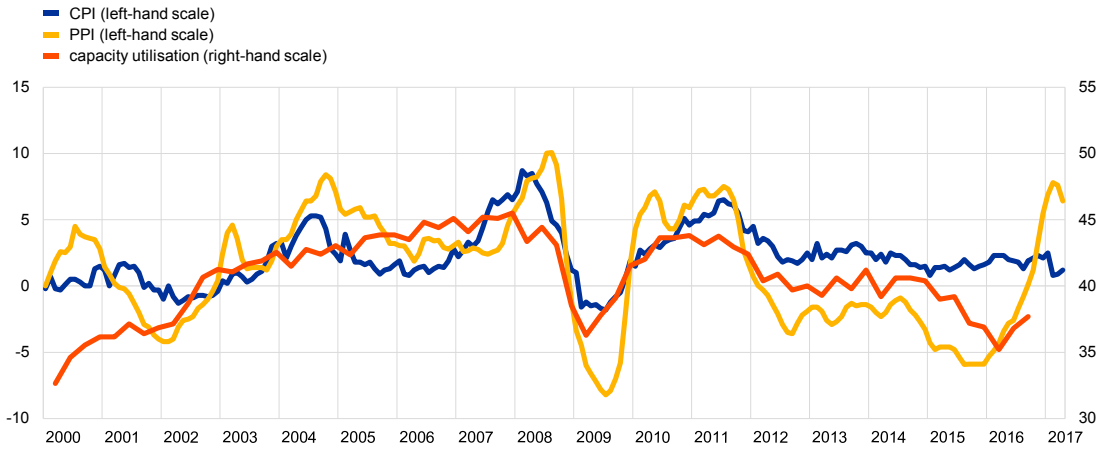
mostly in different ways: on the one hand, the supply-side effect of the entry of lower-cost producers drawing on a large and relatively cheap labour supply has contributed directly to lower global input and import prices.[60] Heightened competitive pressures from China may also have weighed on inflation in other countries by reducing both the market power of firms and the bargaining power of workers.[61] On the other hand, stronger demand in China could also have contributed to upward price pressure in other countries by strengthening external demand. Rising activity in China has also entailed increased consumption of commodities, driving up their prices. The net impact of these different channels on inflation in other economies is ambiguous and may have changed over time.

Three decades of rapid expansion have meant a marked increase in China's influence in the global economy, although its growth rate has slowed in recent years. China's output grew very strongly in the first decade of this century, with GDP increasing by over 10% each year on average. The country has also been a major driver of global commodity consumption: in 2015 it accounted for about 50% of global copper and aluminium and 60% of iron consumption, while 12% of global demand for oil originates in China. Since 2011 China's pace of expansion has slowed, with GDP growth falling from over 10% in 2011 to under 7% in 2016, although its share of global GDP continues to increase. During much of this period producer prices have also fallen markedly: between September 2011 and February 2016, producer prices in China fell cumulatively by 22% (see Chart A) as excess capacity in China, particularly in tradable sectors such as steel, aluminium, cement and shipbuilding, also contributed to waning price pressures. Over the past year, however, renewed buoyancy in the property market, which has strengthened demand for raw materials, and efforts by authorities to address the capacity overhang in some industries have caused producer prices to rebound.

Chart A

Consumer and producer price inflation and capacity utilisation in China

(left-hand scale: year-on-year percentage changes; right-hand scale: percentage of production capacity)



Sources: National Bureau of Statistics of China and the People's Bank of China.
Notes: Capacity utilisation is a diffusion index derived from the 5000 Industrial Enterprises Survey. The latest observations are for April 2017 for consumer price inflation (CPI) and producer price inflation (PPI), and the third quarter of 2016 for capacity utilisation.

60 See the box entitled "Effects of the rising trade integration of low-cost countries on euro area import prices", *Monthly Bulletin*, ECB, August 2006.

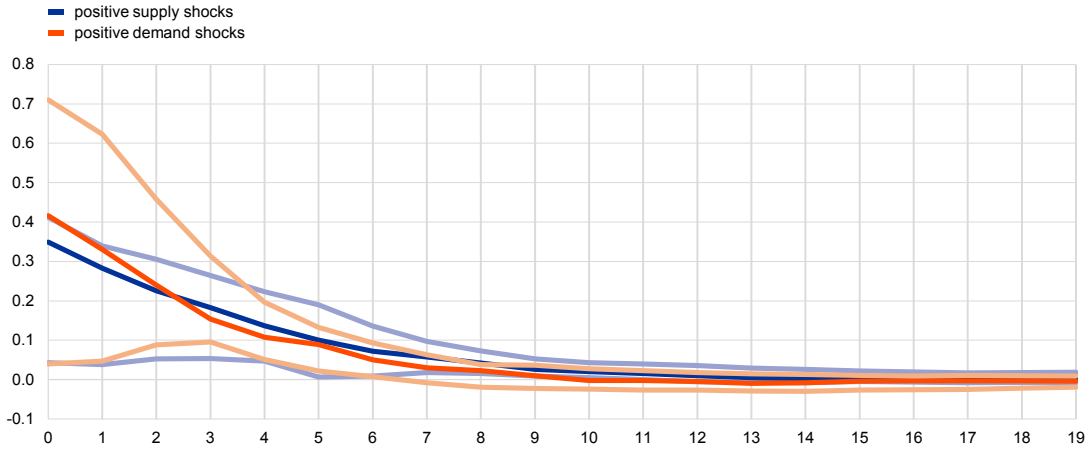
61 For the euro area, see Pula, G. and Skudelny, F., "Globalisation and euro area prices and labour markets: some evidence on the impact of low-cost countries", in Anderton, R. and Kenny, G. (eds.), *Macroeconomic Performance in a Globalising Economy*, Cambridge University Press, 2011.

Small-scale structural Bayesian vector autoregressive (BVAR) models provide one means of analysing the impact of developments in China on inflation in other economies. The estimation proceeds in two stages. In a first step, a BVAR model with sign restrictions is used to distinguish supply and demand shocks originating in China from commodity supply shocks and other global demand shocks (i.e. those not associated with cyclical fluctuations in China).[62] The second step is to trace the impact of these shocks on inflation in advanced economies, again through small-scale BVAR models.[63]

Chart B

Responses of CPI inflation in advanced economies to shocks originating in China

(deviation of year-on-year growth rates following China shocks equivalent to 1% of GDP growth)



Source: ECB calculations.
Notes: The bold lines show the median response of CPI inflation across a sample of advanced economies to structural shocks originating in China. The lighter lines show the interquartile range of responses of CPI inflation across the sample of advanced economies.

Evidence from the model suggests that economic shocks in China can affect CPI inflation in advanced economies. Impulse responses from the model suggest stronger demand in China tends to increase price pressure in advanced economies (see Chart B). A demand shock that lifts Chinese GDP growth by 1 percentage point would on average increase inflation in advanced economies by around 0.1 percentage point after one year. A boost to China's supply capacity is also

62 The first stage BVAR includes China GDP, China producer price inflation, the IMF commodity price index and two relative variables which measure China's share in global GDP and its inflation rate relative to OECD aggregate inflation. Following Eickmeier and Kühnlenz, the sign restrictions use China's share in global GDP to distinguish global from China-specific demand shocks, assuming that shocks that originate in China have a stronger impact on Chinese GDP than on all other countries. A positive Chinese demand shock is therefore assumed to boost GDP and inflation in China and increase China's share in world GDP (relative to the underlying trend). A positive world demand shock is assumed to lift commodity prices, China's GDP and inflation, but to reduce China's share in global GDP relative to underlying trend. To distinguish the commodity supply and China-specific supply shocks, it is assumed that inflation in China reacts less than OECD inflation following a commodity supply shock; this reflects the regulation of many raw material prices in China's domestic markets. Thus a commodity supply shock is assumed to increase commodity prices and to increase inflation in China (but by less than OECD inflation). A supply shock in China is assumed to increase China's GDP and share in world output and to lower China's inflation. See Eickmeier, S. and Kühnlenz, M., "China's role in global inflation dynamics", *Discussion Paper*, No 7, Deutsche Bundesbank, 2013.

63 Separate BVARs are estimated for Australia, Canada, Denmark, Germany, France, Italy, Japan, the Netherlands, Spain, Sweden, Switzerland, the United Kingdom and the United States; quarterly data going back to 1999 was used. The models include GDP, CPI inflation, the nominal effective exchange rate and the short-term interest rate as well as the common structural shocks from the first-stage BVAR, which are assumed to be exogenous. Whereas in the case of the small countries exogeneity is probably a reasonable assumption, for the larger countries it carries some caveats.

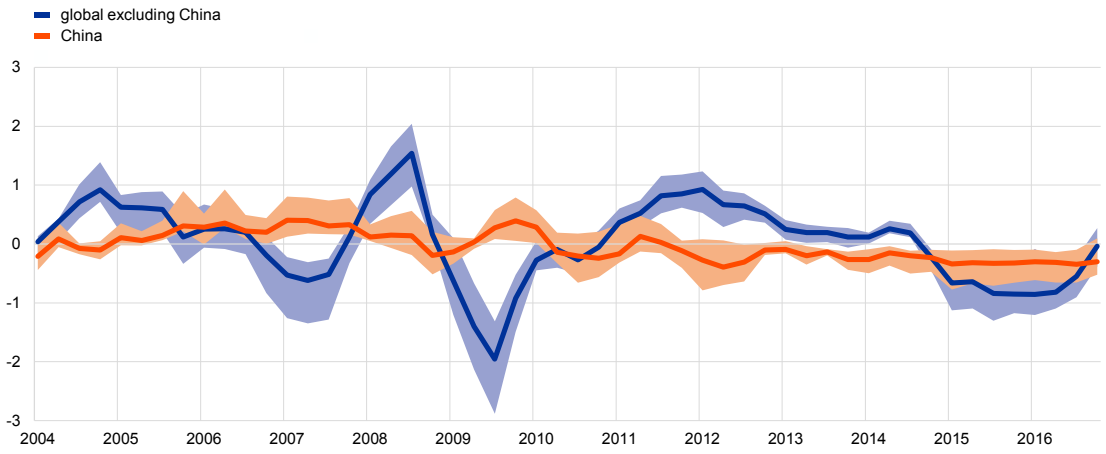
found to increase inflation in other economies by a similar amount. Although an increase in China's supply potential would tend to put downward pressure on prices in China – which would feed through to other economies via lower import prices– the boost to activity also fuels commodity price increases. These results from the model suggest that the direct effects through low-cost production to import prices are outweighed by the effects resulting from stronger dynamics of commodity prices.[64]

As the pace of growth of activity in China has moderated, its influence on inflation in other economies has evolved (see Chart C). The model estimates suggest that in the period when it was growing very rapidly, China tended to provide a modest boost to inflation rates in advanced economies. Between 2004 and mid-2011 shocks originating in China contributed about 0.1 percentage point to annual inflation in advanced economies on average. Since then, as activity growth has slowed, China has exerted a modest drag on advanced economy inflation, with shocks originating in China contributing about -0.2 percentage point on average over the past four years.

Chart C

Estimated contributions of global and China shocks to CPI inflation in a sample of advanced economies

(percentage point contributions to deviations from steady state)



Source: ECB calculations.
Notes: The ranges show the interquartile range of estimates of the contributions of global and China-specific structural shocks to CPI inflation across a sample of advanced economies, including Australia, Canada, Denmark, Germany, France, Italy, Japan, the Netherlands, Spain, Sweden, Switzerland, the United Kingdom and the United States. The shocks originating in China include those relating to supply and demand. The global shocks include a commodity supply shock and a global demand shock. The identification of the shocks is described in footnote 24.

64 Eickmeier and Kühnlenz present contrasting results, finding that a Chinese supply shock tended to lower CPI inflation in other countries (see Eickmeier, S. and Kühnlenz, M., op. cit.). Differences may partly relate to estimates of the impact of shifts in China's activity on global commodity prices. For a discussion of China's effect on commodity prices, see *World Economic Outlook*, IMF, October 2016, Chapter 4.

5 What role do global factors play in a Phillips curve for the euro area?

The Phillips curve, which is broadly understood as the relationship between inflation and economic slack, is a standard framework for explaining and forecasting developments in inflation. The Phillips curve is an important tool that is embedded explicitly or implicitly in many macroeconomic models. However, especially in its strongly simplified versions, the Phillips curve remains a crude tool relative to the complexity of the inflation process. The uncertainty surrounding the adequate modelling of the Phillips curve adds further complications, and so the curve should only be considered as one element in a broader-based analysis of inflation. Nevertheless, it remains a useful frame for understanding inflation.

Phillips curve analyses have traditionally focused on what role domestic slack has in relation to developments in underlying inflation. The focus on underlying inflation – as measured for example in the form of HICP inflation excluding energy and food – allows for inflation to be disregarded in relation to energy and food, which are determined largely by global developments, and to concentrate on services and NEIG inflation, where domestic developments play a more important role. In a benchmark specification of the Phillips curve for the euro area, HICP inflation excluding energy and food depends on the output gap as a measure of slack in the domestic economy. The output gap is meant to cover the effects of slack on wage and price-setting behaviour: all other things being equal, the lower the amount of slack in an economy is, the higher wage and price pressures will be.

External factors are usually taken into account via import prices in Phillips curve specifications. Import prices can influence HICP inflation excluding energy and food in two ways: directly, via the price of imported final consumer goods; and indirectly, via the price of imported intermediate goods used in euro area domestic production.[65] Import prices also capture the influence of developments in global commodity markets – for example in the form of oil prices, which affect HICP inflation excluding energy and food via the indirect effects of higher import prices for oil on production costs.[66] Exchange rate movements can amplify or moderate the effects of foreign price developments on euro area inflation. Import prices – including energy imports measured in euro – are hence an important indicator for capturing the effects of oil price and exchange rate developments on HICP inflation excluding energy and food in the euro area in a Phillips curve framework.

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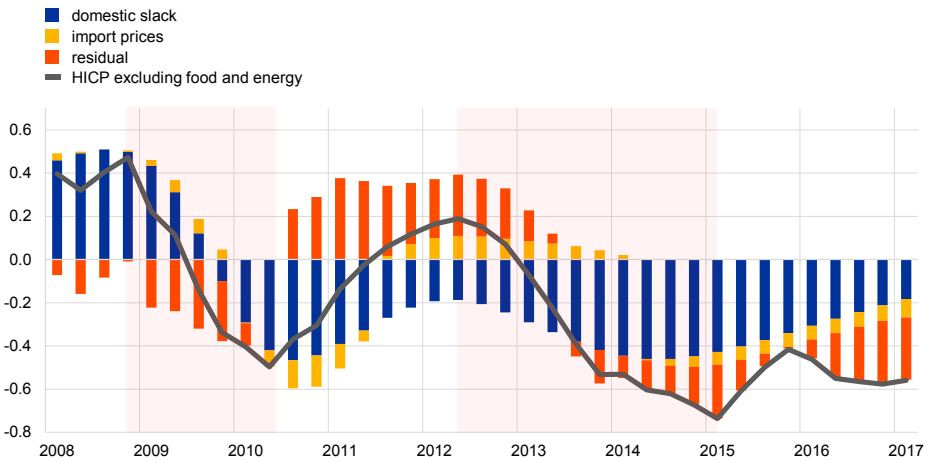
65 See the article entitled “Exchange rate pass-through into euro area inflation”, *Economic Bulletin*, Issue 7, ECB, 2016.

66 See the box entitled “Indirect effects of oil price developments on euro area inflation”, *Monthly Bulletin*, ECB, December 2014; and the article entitled “Commodity prices and their role in assessing euro area growth and inflation”, *Monthly Bulletin*, ECB, October 2013.

Chart 12

Decomposition of HICP inflation excluding energy and food based on a Phillips curve model

(annual percentage changes and percentage point contributions; all values in terms of deviations of their model-implied mean)



Sources: Eurostat and ECB calculations.
Notes: The black line shows deviations of HICP excluding energy and food inflation from its model-implied mean. Contributions (including residuals) are also shown as deviations from their model-implied mean. Contributions are calculated based on an equation in which HICP excluding energy and food inflation (the annualised quarterly growth rate of the seasonally adjusted series) is regressed against its own lag, the lagged output gap of the European Commission, the third lag of import price inflation and a constant. The shaded areas indicate two disinflation periods.

A traditional Phillips curve decomposition of the changes in underlying inflation since the crisis illustrates reasonably well how inflation developed in the period from 2010 – with the largest impact stemming from domestic slack. For the purpose of this article, HICP inflation excluding energy and food is modelled using a simple reduced-form "traditional" Phillips curve specification, including a number of explanatory factors, namely: (i) the output gap as a measure of economic slack; (ii) past inflation terms to capture inertia; and (iii) import price inflation expressed in euro to capture the effect of global inflation and the exchange rate.. Chart 12 breaks down HICP inflation excluding energy and food into these factors by showing each factor's contribution to the deviation of inflation from its long-term mean. In both disinflation periods (2009 until early 2010 and 2012 until early 2015) domestic slack was an important driving factor of the fall in inflation. Lower import prices also had a small downward impact over these periods. The remaining residuals of this Phillips curve decomposition could reflect a number of different factors: these include a potential impact from a mismeasurement of domestic slack in the form of the output gap, but also a potential impact from global factors (over and beyond what is covered by import prices) or the structural impact of reforms on the slope of the Phillips curve.

Is there any indication that globalisation has changed the impact of global cyclical conditions on domestic inflation in a way that cannot be captured by including import prices in Phillips curve analyses? Some of the channels through which global slack may affect domestic inflation may already be captured (at least implicitly) in traditional Phillips curves. As discussed in Section 2, global slack affects import prices, which are usually included in Phillips curve estimates. Measures of domestic slack also incorporate some information about global

conditions, since global demand for goods and services is reflected in net trade, and expectations on foreign demand affect investment decisions quite strongly. At the same time, other channels of globalisation are not explicitly captured in the standard Phillips curve framework. In particular, the greater importance of foreign slack for tradable and internationally substitutable goods or the increase in competition from firms in lower-cost countries, including because of further integration in GVCs, may be significant determinants for domestic inflation dynamics.

One way of assessing what role global influences have is to augment the traditional Phillips curve with a measure of foreign slack. The simplest indicator of global inflationary pressures is provided by a global output gap, which measures the difference between world GDP and the estimated potential output of the global economy. Like any output gap measure, it is surrounded by considerable uncertainty because potential output is unobserved and must be estimated. Judging output gaps for an economy is particularly challenging in real time as estimates are often subject to substantial revisions. The same is true for global output gaps and the problem is compounded by the question of the appropriate weighting of the individual countries' gaps: GDP weights are commonly used for this specific purpose.[67]

More recently empirical studies have focused on an important transmission channel for the effects of global slack on domestic inflation, i.e. the increasing integration of GVCs. Auer, Borio and Filardo argue that the difference in the sensitivity of domestic inflation with respect to foreign and domestic slack can be explained by integration in GVCs.[68]

However, the literature provides only limited support for including a measure of foreign slack in traditional Phillips curve analyses. On the one hand, Borio and Filardo found that proxies for global economic slack added considerable explanatory power to traditional benchmark Phillips curve approaches in advanced economies and that the role of global factors had grown over time. The relevance of the global output gap was also supported by Milani in the case of the United States after 1985. On the other hand, other studies (Calza[69], Gerlach et al.[70], Ihrig et al.[71],

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67 For a discussion of measurement and conceptual issues with global output gap measures, see Tanaka, M. and Young, C., "The economics of global output gap measures", *Bank of England Quarterly Bulletin*, third quarter of 2008. While measures of the global output gap can provide a broad view of world inflationary pressures, for a specific country a better indicator of external price pressures may be to weight output gaps in other economies. Economic slack in other economies can affect domestic inflation either through the imports channel or through the effects of competition in export markets. Weighting the output gaps of other economies according to the share of each bilateral trade relationship in overall trade could therefore help to better capture external price pressures that are most relevant for a particular country. It would also be possible to construct weights that capture both direct bilateral trade and third-market competition by using the "double weighting" methods used to construct effective exchange rate measures. See Schmitz, M., De Clercq, M., Fidora, M., Lauro, B. and Pinheiro, C., "Revisiting the effective exchange rates of the euro", *Occasional Paper Series*, No 134, ECB, June 2012. An alternative, suggested by Borio and Filardo, is to use exchange-rate weighted global output gaps, which can emphasise the role of the exchange rate regime in exporting inflation.

68 For details, see the discussion in Section 2. See also the article entitled "The impact of global value chain participation on current account balances – a global perspective", *Economic Bulletin*, Issue 2, ECB, 2017.

69 Calza, A., "Globalisation, Domestic Inflation and Global Output Gaps: Evidence from the Euro Area", Federal Reserve Bank of Dallas, *Working Paper*, No 13, 2008.

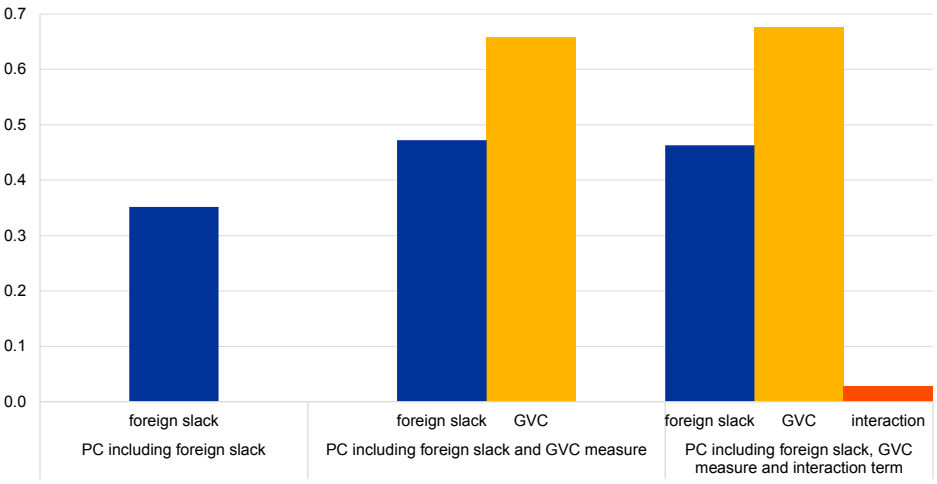
70 Gerlach, S., Giovannini, A., Tille, C. and Viñals, J., "Low Inflation: Testing Times for Central Banks", *10th Geneva Report on the World Economy*, 2008.

Martínez-García and Wynne[72] or Eickmeier and Pijnenburg[73]) find conflicting evidence and suggest that the Borio and Filardo results are likely to be specific to the estimation sample or particular measurement of the global output. More recently Mikolajun and Lodge[74] detect no appreciable direct effects of global economic slack on domestic inflation for the majority of advanced economies. Their results provide little evidence of the existence of large direct effects of global slack on domestic inflation and overall suggest that there is little reason to include global factors into traditional reduced-form Phillips curves. However, this analysis is limited to reduced-form Phillips curves and univariate inflation forecasting models. It might be possible that global slack influences inflation through less direct channels that cannot be captured in this framework. Bianchi and Civelli explore less direct relations within a vector autoregressive model. For a set of 18 countries, they estimate the time-varying relationship of inflation with both domestic and foreign output gaps, finding that global slack plays a significant role. However, in contrast to the results reached by Borio and Filardo, who inspired them, Bianchi and Civelli do not find that the relative influence of global output gaps has become stronger over time.

Chart 13

Significance of foreign slack and GVC integration measures in euro area Phillips curve specifications

(share of specifications in which the respective variables are significant as a percentage of total specifications analysed)



Notes: ECB staff calculations. For technical details, see Box 2. Analyses include up to 108 different Phillips curve specifications. "PC" stands for Phillips curve. The results are based on standard significance tests (applying a 10% level of significance), which do not include a variance correction to account for the fact that auxiliary regressions were employed (see Box 2 for further details). The results should hence be interpreted as representing an upper bound with respect to the share of specifications in which foreign slack and GVC variables are significant.

71 Ihrig, J., Kamin, S., Lindner, D. and Marquez, J., "Some simple tests of the globalization and inflation hypothesis", *International Finance*, Vol. 13, Issue 3, 2010, pp. 343-375.

72 Martínez-García, E. and Wynne, M., "The Global Slack Hypothesis", Federal Reserve Bank of Dallas, *Staff Papers*, No 10, 2010.

73 Eickmeier, S. and Pijnenburg, K., "The Global Dimension of Inflation – Evidence from Factor-Augmented Phillips Curves", *Oxford Bulletin of Economics and Statistics*, Vol. 75, Issue 1, 2013, pp. 103-122.

74 Mikolajun, I. and Lodge, D., "Advanced economy inflation: the role of global factors", *Working Paper Series*, No 1948, ECB, 2016.

Thick modelling analyses find only mixed support for augmenting a traditional Phillips curve for the euro area with a measure of foreign slack and GVC integration. A thick modelling approach, which includes a broad range of up to 108 different Phillips curve specifications combining three different measures of domestic slack, three different measures of foreign slack (combined with six different weighting schemes) and two different measures of GVC integration, with and without interaction terms, allows for the uncertainty about the correct specification of the Phillips curve and the variables used therein to be addressed (for details of the approach taken, see Box 2). This battery of alternative specifications was estimated on a sample spanning the years 2000-16[75].[76] As illustrated in Chart 13, the inclusion of some measure of global slack in the Phillips curve can help establish the significant role that foreign slack plays in around one-third of the specifications. If GVCs and foreign slack are included simultaneously, they are significant in around 50% to 60% of the specifications. The GVC measure captures a downward sloping trend, which in some specifications is significant if included in addition to the weighted foreign slack measure. However, the GVC measure is almost never significant when interacted with the global slack, implying that the integration in GVCs does not seem to have an amplifying effect on the role of foreign slack.

Box 2
Augmenting the traditional Phillips curve with measures of global slack

How much of a role foreign slack plays in domestic HICP inflation excluding energy and food can be assessed by augmenting a traditional Phillips curve with a measure of foreign slack.

Formally, this Phillips curve representation would look as follows:

$$\pi_t = \beta_1 \pi_{t-1} + \beta_2 gapd_{t-1} + \beta_3 imp_{t-2} + \beta_4 \pi_t^e + \beta_5 gapf_{t-1} + c + e_t \quad (1)$$

where π_t represents the annualised quarter-on-quarter rate of HICP inflation excluding energy and food and π^e its corresponding measure of expectations, $gapd_{t-1}$ is a measure of domestic slack (with one lag), imp_{t-2} represents import prices (with two lags), $gapf_{t-1}$ is a measure of foreign slack (excluding the euro area and with one lag) and c is a constant. To address the uncertainty surrounding the specification of the Phillips curve, and especially the measurement of slack, we apply a "thick modelling" approach with a large number of specifications. Three different measures for the domestic slack (the output gap, real GDP growth and the unemployment rate) are combined with three different measures of foreign slack for each country (the output gap from the IMF and the OECD, and a Hodrick-Prescott filter output gap measure) combined with six different weighting schemes.[77] Additionally, we employ two different measures of GVC integration.[78] Overall, we analyse 108 different Phillips curve specifications.

75 GVC measures from the World Input-Output Database are only available from 2000 onwards.

76 Timmer, M.P., Dietzenbacher, E., Los, B., Stehrer, R. and de Vries, G.J., "An Illustrated User Guide to the World Input-Output Database: the Case of Global Automotive Production", *Review of International Economics*, Vol. 23, 2015, pp. 575-605.

77 For details on this approach to the Phillips curve, which has been adapted to this exercise to account for the availability of data, see Ciccarelli and Osbat, "Low inflation in the euro area: Causes and consequences", *Occasional Paper Series*, No 181, January 2017.

The measure for foreign slack $gapf_t^j$ is constructed for each country *j* as a weighted average of *k* output gaps, i.e.

$$gapf_t^j = \Sigma^k w_t^{j,k} * gapd_t^k \quad (2)$$

where $w_t^{j,k}$ is either the share of bilateral trade flows of country *j* with country *k* over country *j*'s total trade flows or the share of country *k* in total global output.

We use auxiliary regressions to tackle the distortions arising from the correlation of inflation expectations with past inflation and between domestic and foreign slack.

However, the role of foreign slack may depend on the degree of integration of the country in GVCs. This is essentially what Auer, Borio and Filardo put forward when showing that the relative importance of foreign slack depends to a large extent on integration in GVCs. Therefore, it seems reasonable to augment our equation 1 with an indicator for integration in GVCs. To fully capture the potential impact of GVC integration, we also analyse its interaction with foreign slack.[79] Indeed, the effect of foreign slack might depend on the level of integration in GVCs (i.e. the more integrated a country is in GVCs, the stronger the effect of foreign slack could be). Therefore, we estimate the following two equations, with an indicator for GVC integration included in equation 3 and also an interaction term with foreign slack in equation 4:

$$\pi_t = \beta_1 \pi_{t-1} + \beta_2 gapd_{t-1} + \beta_3 imp_{t-2} + \beta_4 \pi_t^e + \beta_5 GVC_{t-1} + \beta_6 gapf_{t-1} + c + e_t \quad (3)$$

$$\pi_t = \beta_1 \pi_{t-1} + \beta_2 gapd_{t-1} + \beta_3 imp_{t-2} + \beta_4 \pi_t^e + \beta_5 GVC_{t-1} + \beta_6 gapf_{t-1} + \beta_7 gapf_{t-1} * GVC_{t-1} + c + e_t \quad (4)$$

6 Conclusion

Drawing on evidence from the available data, models and existing literature, this article contributes to a better understanding of the relative importance of domestic and global factors in shaping inflation in the euro area. A number of conclusions can be drawn.

1. Since the early 1990s a common pattern around the world has been identified regarding inflation developments. However this commonality can to a large extent be explained by a change in monetary policy orientation and global commodity price developments.

2. The role of global factors in domestic inflation varies strongly over time, notably on account of developments in commodity prices. In the case of the euro area, for example, the decline in inflation in 2008-09 was driven predominantly by global factors, whereas domestic factors were more decisive in the disinflation

[78] Imported intermediate, foreign value added (FV), indirect value added (IV) and a GVC participation measure are computed as FV + IV.

[79] Note also that the regressors used for the interaction terms are demeaned, so for instance the coefficients can be interpreted as the effect of GVCs when foreign slack is at its sample mean.

period of 2012-15. This underlines how important comprehensive analyses of the driving factors of inflation are when formulating adequate policy responses.

3. Global developments are thought to increasingly affect domestic wage and price pressures via the integration and contestability of labour and product markets. Although this theory may seem appealing, it is nevertheless difficult to capture empirically. In this respect we find, for example, only limited support for including measures of global slack and measures of integration in GVCs in Phillips curve analyses when studying inflation in the euro area.

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 [2]	United States	United Kingdom	Japan	China	Memo item: euro area	OECD countries		United States	United Kingdom (HICP)	Japan	China	Memo item: euro area [3] (HICP)
							Total	excluding food and energy					
	1	2	3	4	5	6	7	8	9	10	11	12	13
2014	3.4	2.4	3.1	0.2	7.3	1.2	1.7	1.8	1.6	1.5	2.7	2.0	0.4
2015	3.4	2.6	2.2	1.1	6.9	2.0	0.6	1.7	0.1	0.0	0.8	1.4	0.0
2016	3.1	1.6	1.8	1.0	6.7	1.8	1.1	1.8	1.3	0.7	-0.1	2.0	0.2
2016 Q2	0.8	0.4	0.6	0.4	1.9	0.3	0.8	1.8	1.0	0.4	-0.4	2.1	-0.1
Q3	0.8	0.9	0.5	0.2	1.8	0.4	1.0	1.8	1.1	0.7	-0.5	1.7	0.3
Q4	0.9	0.5	0.7	0.3	1.7	0.5	1.5	1.8	1.8	1.2	0.3	2.2	0.7
2017 Q1	.	0.3	0.2	0.5	1.3	0.6	2.4	1.8	2.5	2.1	0.3	1.4	1.8
2016 Dec.	-	-	-	-	-	-	1.8	1.8	2.1	1.6	0.3	2.1	1.1
2017 Jan.	-	-	-	-	-	-	2.3	1.9	2.5	1.8	0.4	2.5	1.8
Feb.	-	-	-	-	-	-	2.5	1.9	2.7	2.3	0.3	0.8	2.0
Mar.	-	-	-	-	-	-	2.3	1.8	2.4	2.3	0.2	0.9	1.5
Apr.	-	-	-	-	-	-	2.4	1.9	2.2	2.7	0.4	1.2	1.9
May [4]	-	-	-	-	-	-	.	.	.	.	.	.	1.4

Sources: Eurostat (col. 3, 6, 10, 13); BIS (col. 2, 4, 9, 11, 12); OECD (col. 1, 5, 7, 8).
1) Quarterly data seasonally adjusted; annual data unadjusted.
2) Data for Argentina are currently not available owing to the state of emergency in the national statistical system declared by the government of Argentina on 7 January 2016. As a consequence, Argentina is not included in the calculation of the G20 aggregate. The policy regarding the inclusion of Argentina will be reconsidered in the future depending on further developments.
3) Data refer to the changing composition of the euro area.
4) The figure for the euro area is an estimate based on provisional national data, as well as on early information on energy prices.

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
2014	54.1	57.3	57.9	50.9	51.1	52.7	53.2	54.0	51.5	2.5	3.8	1.7
2015	53.1	55.8	56.2	51.4	50.4	53.8	51.8	53.7	50.4	1.3	3.7	-0.2
2016	51.6	52.4	53.4	50.5	51.4	53.3	51.8	51.9	50.2	1.1	1.2	0.9
2016 Q2	50.7	51.5	52.6	49.0	50.5	53.1	49.9	51.0	48.8	0.2	0.3	0.1
Q3	51.3	51.9	51.6	49.6	51.7	52.9	51.7	51.2	50.1	1.0	0.9	1.1
Q4	53.2	54.6	55.6	52.0	53.1	53.8	53.3	53.1	50.6	1.7	-1.1	3.6
2017 Q1	53.2	54.3	54.6	52.5	52.3	55.6	53.4	53.2	51.8	2.5	1.3	3.4
2016 Dec.	53.5	54.1	56.7	52.8	53.5	54.4	53.5	53.5	50.7	1.7	-1.1	3.6
2017 Jan.	53.9	55.8	55.2	52.3	52.2	54.4	53.1	54.1	51.7	2.9	0.5	4.5
Feb.	52.7	54.1	53.8	52.2	52.6	56.0	53.7	52.5	52.2	3.0	1.2	4.1
Mar.	53.1	53.0	54.8	52.9	52.1	56.4	53.5	53.0	51.5	2.5	1.3	3.4
Apr.	52.9	53.2	56.2	52.6	51.2	56.8	52.7	52.9	51.5	.	.	.
May	53.0	53.6	54.4	53.4	51.5	56.8	52.5	53.2	51.2	.	.	.

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
2014	0.09	0.13	0.21	0.31	0.48	0.23	0.13
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
2016 Nov.	-0.35	-0.37	-0.31	-0.21	-0.07	0.91	-0.06
Dec.	-0.35	-0.37	-0.32	-0.22	-0.08	0.98	-0.04
2017 Jan.	-0.35	-0.37	-0.33	-0.24	-0.09	1.03	-0.02
Feb.	-0.35	-0.37	-0.33	-0.24	-0.11	1.04	-0.01
Mar.	-0.35	-0.37	-0.33	-0.24	-0.11	1.13	0.00
Apr.	-0.36	-0.37	-0.33	-0.25	-0.12	1.16	0.02
May	-0.36	-0.37	-0.33	-0.25	-0.13	1.19	-0.01

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
2014	-0.02	-0.09	-0.12	0.07	0.65	0.74	1.95	1.45	-0.15	-0.11	0.58	1.77
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
2016 Nov.	-0.80	-0.80	-0.78	-0.42	0.27	1.07	1.60	1.30	-0.80	-0.69	0.39	1.29
Dec.	-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 Jan.	-0.70	-0.70	-0.69	-0.28	0.50	1.20	1.69	1.36	-0.72	-0.60	0.64	1.63
Feb.	-0.87	-0.88	-0.90	-0.54	0.25	1.13	1.56	1.05	-0.92	-0.86	0.34	1.46
Mar.	-0.75	-0.74	-0.73	-0.36	0.38	1.12	1.36	1.01	-0.75	-0.64	0.47	1.52
Apr.	-0.78	-0.77	-0.73	-0.35	0.38	1.15	1.21	1.03	-0.75	-0.61	0.48	1.50
May	-0.73	-0.74	-0.74	-0.39	0.36	1.10	1.05	0.88	-0.76	-0.67	0.43	1.54

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
2014	318.7	3,145.3	644.3	216.6	510.6	335.5	180.0	452.9	310.8	279.2	306.7	668.1	1,931.4	15,460.4
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
2016 Nov.	324.5	3,026.4	654.4	247.7	594.1	286.0	152.5	515.1	378.7	231.5	306.9	778.3	2,165.0	17,689.5
Dec.	342.6	3,207.3	698.1	253.7	619.1	313.6	165.7	541.6	396.0	237.1	320.9	797.3	2,246.6	19,066.0
2017 Jan.	352.4	3,298.8	720.9	258.4	637.7	321.1	170.1	557.7	412.7	240.1	337.5	817.4	2,275.1	19,194.1
Feb.	353.2	3,293.1	728.9	257.0	644.9	312.5	166.6	563.0	431.7	239.1	334.6	839.5	2,329.9	19,188.7
Mar.	365.7	3,427.1	740.4	261.7	671.6	314.2	174.7	578.4	450.3	252.1	349.6	870.0	2,366.8	19,340.2
Apr.	373.9	3,491.8	753.7	271.1	683.6	319.4	178.0	598.4	459.3	260.7	349.8	893.3	2,359.3	18,736.4
May	387.1	3,601.9	765.9	281.9	707.5	318.8	186.4	616.2	477.1	272.5	363.8	935.1	2,395.3	19,726.8

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
2016 May	0.10	0.56	0.53	0.87	6.56	16.75	5.21	6.09	6.46	2.56	1.84	2.02	2.05	2.11	2.36	2.02
June	0.09	0.54	0.56	0.85	6.54	16.80	4.96	5.87	6.18	2.44	1.81	2.00	1.96	2.01	2.32	1.96
July	0.09	0.52	0.50	0.91	6.45	16.80	5.14	5.96	6.29	2.39	1.81	1.96	1.96	1.95	2.32	1.92
Aug.	0.08	0.51	0.52	0.83	6.48	16.78	5.43	6.01	6.37	2.40	1.86	1.95	1.86	1.88	2.31	1.90
Sep.	0.08	0.50	0.50	0.79	6.50	16.78	5.16	5.75	6.14	2.35	1.80	1.98	1.85	1.85	2.28	1.86
Oct.	0.08	0.49	0.44	0.75	6.43	16.78	5.16	5.69	6.11	2.43	1.78	1.90	1.80	1.81	2.25	1.81
Nov.	0.08	0.49	0.43	0.78	6.40	16.71	4.91	5.74	6.12	2.43	1.76	1.91	1.76	1.79	2.24	1.79
Dec.	0.08	0.49	0.43	0.76	6.34	16.68	4.78	5.48	5.87	2.31	1.77	1.90	1.80	1.75	2.24	1.78
2017 Jan.	0.07	0.48	0.42	0.75	6.35	16.62	5.05	5.87	6.24	2.27	1.76	1.87	1.80	1.76	2.28	1.81
Feb.	0.07	0.48	0.40	0.76	6.39	16.68	5.09	5.72	6.17	2.39	1.77	1.89	1.84	1.81	2.29	1.85
Mar.	0.06	0.48	0.40	0.73	6.35	16.68	4.99	5.62	6.08	2.39	1.74	1.88	1.85	1.82	2.25	1.85
Apr. [(p)]	0.06	0.47	0.40	0.72	6.31	16.67	4.81	5.58	5.97	2.36	1.72	1.90	1.91	1.85	2.26	1.87

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
2016 May	0.11	0.13	0.63	2.77	2.91	3.10	2.62	1.91	1.94	1.92	1.27	1.68	1.74	1.92
June	0.11	0.15	0.64	2.75	2.66	3.01	2.52	1.85	1.91	1.85	1.34	1.60	1.64	1.90
July	0.10	0.16	0.42	2.71	2.73	3.07	2.47	1.86	1.91	1.81	1.28	1.56	1.69	1.87
Aug.	0.09	0.16	0.47	2.74	2.69	3.02	2.46	1.87	1.95	1.80	1.22	1.48	1.54	1.83
Sep.	0.09	0.12	0.47	2.73	2.65	2.96	2.42	1.83	1.86	1.73	1.28	1.61	1.63	1.86
Oct.	0.08	0.15	0.49	2.68	2.63	3.04	2.37	1.81	1.84	1.72	1.28	1.40	1.63	1.83
Nov.	0.07	0.12	0.42	2.65	2.60	2.91	2.38	1.82	1.82	1.68	1.29	1.43	1.52	1.82
Dec.	0.07	0.12	0.59	2.64	2.58	2.84	2.30	1.84	1.84	1.68	1.33	1.46	1.62	1.81
2017 Jan.	0.06	0.12	0.51	2.64	2.68	2.80	2.30	1.81	1.86	1.73	1.22	1.38	1.62	1.79
Feb.	0.06	0.10	0.53	2.64	2.58	2.78	2.35	1.77	1.76	1.71	1.18	1.32	1.53	1.76
Mar.	0.06	0.08	0.58	2.57	2.52	2.79	2.35	1.76	1.79	1.72	1.31	1.63	1.58	1.82
Apr. [(p)]	0.06	0.10	0.42	2.55	2.55	2.70	2.36	1.80	1.80	1.71	1.34	1.51	1.63	1.82

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														
2014	1,321	543	131	.	59	538	50	410	219	34	.	38	93	25
2015	1,274	517	152	.	62	478	65	337	153	36	.	33	82	34
2016	1,247	519	139	.	61	466	62	335	147	45	.	32	79	33
2016 Oct.	1,296	529	145	.	71	484	67	341	155	45	.	35	69	37
Nov.	1,310	536	152	.	70	487	65	349	139	63	.	33	88	26
Dec.	1,247	519	139	.	61	466	62	305	128	69	.	33	50	25
2017 Jan.	1,278	536	136	.	74	469	63	392	187	39	.	39	88	41
Feb.	1,310	549	148	.	80	466	66	325	157	37	.	31	72	29
Mar.	1,331	546	147	.	84	480	74	360	157	37	.	43	90	33
Long-term														
2014	15,135	4,054	3,163	.	990	6,285	642	220	65	44	.	16	85	10
2015	15,239	3,784	3,281	.	1,055	6,482	637	215	68	45	.	13	81	9
2016	15,256	3,647	3,191	.	1,134	6,643	641	208	59	46	.	17	78	8
2016 Oct.	15,213	3,674	3,165	.	1,105	6,628	641	239	56	61	.	22	92	8
Nov.	15,275	3,668	3,172	.	1,130	6,664	641	216	43	64	.	26	76	7
Dec.	15,256	3,647	3,191	.	1,134	6,643	641	163	45	77	.	13	25	2
2017 Jan.	15,313	3,651	3,200	.	1,136	6,687	638	312	101	80	.	15	107	9
Feb.	15,337	3,673	3,200	.	1,139	6,685	640	236	77	47	.	12	89	12
Mar.	15,364	3,654	3,186	.	1,147	6,735	643	251	63	61	.	21	97	9

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											
2014	16,456.0	4,597.8	3,293.5	.	1,048.8	6,823.2	692.7	5,958.0	591.1	782.2	4,584.6
2015	16,512.8	4,301.1	3,432.9	.	1,116.6	6,960.1	702.1	6,744.7	586.1	907.6	5,251.0
2016	16,502.8	4,166.1	3,330.1	.	1,195.1	7,108.6	703.0	7,029.1	538.7	1,020.0	5,470.4
2016 Oct.	16,508.9	4,203.6	3,309.9	.	1,176.2	7,111.9	707.3	6,665.7	479.2	909.6	5,277.0
Nov.	16,584.4	4,203.5	3,324.1	.	1,200.1	7,150.4	706.1	6,651.0	482.3	954.6	5,214.1
Dec.	16,502.8	4,166.1	3,330.1	.	1,195.1	7,108.6	703.0	7,029.1	538.7	1,020.0	5,470.4
2017 Jan.	16,590.4	4,187.0	3,336.8	.	1,210.1	7,155.9	700.5	7,015.2	542.3	1,018.4	5,454.5
Feb.	16,646.8	4,222.1	3,348.1	.	1,219.5	7,150.9	706.3	7,199.0	539.0	1,026.6	5,633.4
Mar.	16,695.6	4,200.1	3,333.2	.	1,230.2	7,215.0	716.9	7,506.9	609.8	1,056.6	5,840.4
Growth rate											
2014	-0.7	-8.1	0.4	.	4.9	3.1	1.1	1.6	7.2	2.0	0.7
2015	0.2	-7.1	5.6	.	4.7	1.8	0.6	1.1	4.5	1.5	0.6
2016	0.1	-2.9	-2.3	.	7.1	2.1	-0.1	0.5	1.2	1.0	0.4
2016 Oct.	-0.2	-4.0	-1.4	.	6.4	1.5	1.6	0.9	2.8	1.4	0.7
Nov.	-0.1	-4.2	-0.9	.	7.2	1.6	-0.5	0.8	2.8	1.0	0.5
Dec.	0.1	-2.9	-2.3	.	7.1	2.1	-0.1	0.5	1.2	1.0	0.4
2017 Jan.	0.8	-2.0	-1.0	.	9.0	2.1	-0.3	0.6	1.5	1.1	0.4
Feb.	1.3	-1.6	1.4	.	9.9	1.6	0.8	0.7	4.1	1.1	0.3
Mar.	1.4	-1.3	2.1	.	9.4	1.6	0.8	0.9	5.8	0.7	0.5

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
2014	101.8	97.9	97.0	91.9	98.3	100.0	114.7	96.1
2015	92.4	88.4	89.3	83.6	82.7	89.6	106.5	87.8
2016	94.8	90.1	91.4	85.7	81.8	90.6	110.4	90.0
2016 Q2	94.9	90.3	91.7	85.9	81.9	90.8	110.8	90.4
Q3	95.2	90.5	91.8	86.0	81.5	90.6	110.6	90.1
Q4	94.9	90.2	91.1	85.6	81.6	90.3	110.0	89.6
2017 Q1	94.2	89.7	90.3	.	.	.	109.2	88.7
2016 Dec.	94.2	89.6	90.4	-	-	-	109.2	88.9
2017 Jan.	94.4	89.8	90.4	-	-	-	109.7	89.1
Feb.	93.9	89.5	90.0	-	-	-	108.8	88.5
Mar.	94.4	89.8	90.4	-	-	-	109.2	88.6
Apr.	94.1	89.6	90.1	-	-	-	108.8	88.3
May	96.0	91.2	91.9	-	-	-	111.1	89.9
Percentage change versus previous month								
2017 May	2.0	1.8	2.0	-	-	-	2.1	1.9
Percentage change versus previous year								
2017 May	1.0	0.8	0.1	-	-	-	0.0	-0.9

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
2014	8.186	7.634	27.536	7.455	308.706	140.306	4.184	0.806	4.4437	9.099	1.215	1.329
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
2016 Q2	7.379	7.504	27.040	7.439	313.371	121.949	4.372	0.787	4.4986	9.278	1.096	1.129
Q3	7.443	7.493	27.029	7.442	311.016	114.292	4.338	0.850	4.4646	9.511	1.089	1.117
Q4	7.369	7.523	27.029	7.439	309.342	117.918	4.378	0.869	4.5069	9.757	1.080	1.079
2017 Q1	7.335	7.467	27.021	7.435	309.095	121.014	4.321	0.860	4.5217	9.506	1.069	1.065
2016 Dec.	7.298	7.540	27.031	7.436	312.235	122.395	4.436	0.844	4.5164	9.709	1.075	1.054
2017 Jan.	7.319	7.530	27.021	7.435	308.987	122.136	4.367	0.861	4.5018	9.511	1.071	1.061
Feb.	7.314	7.448	27.021	7.435	308.502	120.168	4.308	0.853	4.5136	9.476	1.066	1.064
Mar.	7.369	7.423	27.021	7.436	309.714	120.676	4.287	0.866	4.5476	9.528	1.071	1.068
Apr.	7.389	7.450	26.823	7.438	311.566	118.294	4.237	0.848	4.5291	9.594	1.073	1.072
May	7.613	7.432	26.572	7.440	309.768	124.093	4.200	0.856	4.5539	9.710	1.090	1.106
Percentage change versus previous month												
2017 May	3.0	-0.2	-0.9	0.0	-0.6	4.9	-0.9	0.9	0.5	1.2	1.7	3.1
Percentage change versus previous year												
2017 May	3.1	-0.9	-1.7	0.0	-1.5	0.7	-4.6	10.0	1.2	4.5	-1.4	-2.2

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)												
2016 Q1	22,214.0	23,223.8	-1,009.7	9,717.4	8,038.3	7,112.1	9,946.3	-29.2	4,738.4	5,239.2	675.3	13,420.1
Q2	22,791.7	23,620.8	-829.1	9,872.6	8,256.7	7,429.5	9,945.9	-62.1	4,829.9	5,418.2	721.8	13,576.8
Q3	23,035.1	23,792.8	-757.6	9,842.9	8,116.4	7,691.7	10,130.7	-62.5	4,836.0	5,545.7	727.0	13,576.9
Q4	23,577.7	24,207.2	-629.5	10,237.5	8,397.5	7,885.1	10,285.6	-55.1	4,802.6	5,524.1	707.7	13,558.8
Outstanding amounts as a percentage of GDP												
2016 Q4	219.4	225.3	-5.9	95.3	78.1	73.4	95.7	-0.5	44.7	51.4	6.6	126.2
Transactions												
2016 Q2	236.6	150.0	86.6	16.8	50.2	122.4	-72.0	-45.8	141.1	171.8	2.2	-
Q3	196.2	75.9	120.3	39.3	-75.8	127.2	5.7	23.8	-1.8	146.0	7.7	-
Q4	123.7	27.5	96.3	145.9	112.5	13.4	-60.9	15.4	-55.4	-24.2	4.6	-
2017 Q1	570.8	528.5	42.3	225.3	203.6	150.4	33.4	7.6	189.9	291.4	-2.5	-
2016 Oct.	261.6	253.7	8.0	87.0	52.8	5.1	-46.4	6.2	167.2	247.2	-4.0	-
Nov.	25.4	24.6	0.8	28.8	51.1	-14.5	15.4	2.9	5.8	-42.0	2.5	-
Dec.	-163.3	-250.7	87.4	30.1	8.6	22.7	-29.9	6.3	-228.5	-229.4	6.1	-
2017 Jan.	375.8	374.4	1.4	107.4	98.1	43.7	31.1	2.3	227.5	245.2	-5.1	-
Feb.	191.8	193.8	-2.0	95.1	94.9	54.3	-19.2	4.9	35.4	118.2	2.0	-
Mar.	3.1	-39.7	42.9	22.8	10.6	52.4	21.6	0.4	-73.0	-72.0	0.6	-
12-month cumulated transactions												
2017 Mar.	1,127.4	781.8	345.5	427.3	290.5	413.3	-93.7	1.0	273.8	585.0	12.0	-
12-month cumulated transactions as a percentage of GDP												
2017 Mar.	10.4	7.2	3.2	3.9	2.7	3.8	-0.9	0.0	2.5	5.4	0.1	-

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)											
2014	10,143.5	9,783.8	5,633.2	2,125.7	1,991.5	1,000.4	600.0	383.1	33.5	359.7	4,534.3	4,174.6
2015	10,473.8	10,002.8	5,748.2	2,163.7	2,070.0	1,019.2	633.3	408.4	20.9	471.0	4,827.9	4,356.9
2016	10,745.4	10,272.3	5,887.3	2,218.1	2,163.5	1,055.4	660.9	439.7	3.4	473.1	4,902.6	4,429.5
2016 Q2	2,672.6	2,551.6	1,465.1	553.0	534.7	260.3	163.6	109.2	-1.2	121.0	1,213.5	1,092.5
Q3	2,689.3	2,568.0	1,473.2	555.5	536.3	264.6	165.4	104.1	3.1	121.2	1,223.9	1,102.6
Q4	2,715.2	2,614.1	1,488.3	558.4	559.2	267.4	166.9	122.2	8.2	101.1	1,258.8	1,157.6
2017 Q1	2,729.6	2,639.3	1,501.8	562.6	567.3	.	.	.	7.6	90.3	1,288.7	1,198.4
	as a percentage of GDP											
2016	100.0	95.6	54.8	20.6	20.1	9.8	6.2	4.1	0.0	4.4	-	-
	Chain-linked volumes (prices for the previous year)											
	quarter-on-quarter percentage changes											
2016 Q2	0.3	0.4	0.4	0.3	1.2	-0.6	1.0	5.9	-	-	1.2	1.6
Q3	0.4	0.4	0.4	0.1	0.0	1.5	0.4	-5.0	-	-	0.4	0.3
Q4	0.5	1.4	0.4	0.3	3.4	0.1	-0.4	17.5	-	-	1.7	3.8
2017 Q1	0.6	0.6	0.3	0.4	1.3	.	.	.	-	-	1.2	1.3
	annual percentage changes											
2014	1.2	1.3	0.8	0.7	1.6	-0.9	4.6	3.4	-	-	4.4	4.9
2015	2.0	1.9	1.8	1.3	3.2	1.4	4.7	5.6	-	-	6.2	6.3
2016	1.8	2.2	2.1	1.8	3.7	2.4	3.8	7.0	-	-	3.0	4.1
2016 Q2	1.6	2.3	2.0	2.0	3.7	1.9	5.2	6.2	-	-	2.7	4.2
Q3	1.8	1.9	1.9	1.7	2.5	2.6	3.9	-0.2	-	-	2.8	3.2
Q4	1.8	2.6	2.0	1.4	5.1	1.9	1.1	19.9	-	-	3.8	5.7
2017 Q1	1.9	2.8	1.6	1.0	6.0	.	.	.	-	-	4.6	7.1
	contributions to quarter-on-quarter percentage changes in GDP; percentage points											
2016 Q2	0.3	0.4	0.2	0.1	0.2	-0.1	0.1	0.2	-0.1	-0.1	-	-
Q3	0.4	0.4	0.2	0.0	0.0	0.1	0.0	-0.2	0.1	0.1	-	-
Q4	0.5	1.4	0.2	0.1	0.7	0.0	0.0	0.7	0.4	-0.8	-	-
2017 Q1	0.6	0.6	0.2	0.1	0.3	.	.	.	0.1	0.0	-	-
	contributions to annual percentage changes in GDP; percentage points											
2014	1.2	1.3	0.4	0.1	0.3	-0.1	0.3	0.1	0.4	0.0	-	-
2015	2.0	1.8	1.0	0.3	0.6	0.1	0.3	0.2	-0.1	0.2	-	-
2016	1.8	2.1	1.1	0.4	0.7	0.2	0.2	0.3	-0.1	-0.3	-	-
2016 Q2	1.6	2.2	1.1	0.4	0.7	0.2	0.3	0.2	-0.1	-0.5	-	-
Q3	1.8	1.8	1.1	0.3	0.5	0.3	0.2	0.0	-0.1	0.0	-	-
Q4	1.8	2.5	1.1	0.3	1.0	0.2	0.1	0.8	0.1	-0.7	-	-
2017 Q1	1.9	2.7	0.9	0.2	1.2	.	.	.	0.4	-0.8	-	-

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)											
2014	9,109.0	150.3	1,780.3	460.9	1,713.7	417.9	460.9	1,045.5	980.7	1,777.5	321.3	1,034.5
2015	9,402.4	151.4	1,890.8	468.0	1,765.6	430.6	460.4	1,067.0	1,025.1	1,816.2	327.3	1,071.5
2016	9,637.4	149.2	1,928.2	486.6	1,817.1	445.2	449.4	1,093.6	1,068.5	1,863.5	336.1	1,108.0
2016 Q2	2,396.8	36.7	477.6	121.1	451.7	110.8	112.5	272.4	266.3	464.0	83.7	275.7
Q3	2,411.8	37.2	481.3	121.9	454.3	111.7	112.2	274.0	267.8	467.2	84.1	277.5
Q4	2,434.2	38.6	487.1	122.9	459.9	112.5	111.3	276.6	270.3	470.4	84.6	281.0
2017 Q1	2,446.3	38.8	488.4	124.3	463.1	112.5	111.8	277.9	273.4	471.4	84.9	283.3
	as a percentage of value added											
2016	100.0	1.5	20.0	5.0	18.9	4.6	4.7	11.3	11.1	19.3	3.5	-
	Chain-linked volumes (prices for the previous year)											
	quarter-on-quarter percentage changes											
2016 Q2	0.3	-0.6	0.1	0.2	0.4	1.0	-0.6	0.2	1.3	0.3	0.0	0.4
Q3	0.4	-0.6	0.7	0.3	0.4	1.4	-0.1	0.2	0.3	0.4	0.5	0.5
Q4	0.5	0.1	0.7	0.2	0.7	0.3	-0.3	0.4	0.6	0.4	0.2	0.9
2017 Q1	0.6	2.1	0.2	1.1	0.6	0.7	0.9	0.5	1.2	0.2	0.3	0.8
	annual percentage changes											
2014	1.2	1.5	2.5	-1.2	1.3	3.8	-1.3	0.6	2.7	0.5	0.1	1.2
2015	1.9	0.5	4.1	0.1	1.8	3.0	0.1	0.7	2.8	0.9	0.1	3.2
2016	1.6	-1.6	1.6	1.7	2.3	3.0	-0.2	0.9	3.1	1.2	1.1	2.7
2016 Q2	1.5	-1.3	1.3	1.6	2.2	2.6	-0.7	0.9	3.6	1.0	1.1	2.5
Q3	1.7	-1.9	1.3	2.2	2.2	3.4	-0.2	1.0	3.1	1.3	1.2	2.8
Q4	1.8	-2.5	2.0	1.5	2.5	3.5	-0.4	1.0	2.9	1.5	1.3	2.1
2017 Q1	1.8	1.0	1.7	1.8	2.2	3.5	-0.1	1.3	3.4	1.2	1.1	2.6
	contributions to quarter-on-quarter percentage changes in value added; percentage points											
2016 Q2	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0	-
Q3	0.4	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	-
Q4	0.5	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0	-
2017 Q1	0.6	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	-
	contributions to annual percentage changes in value added; percentage points											
2014	1.2	0.0	0.5	-0.1	0.2	0.2	-0.1	0.1	0.3	0.1	0.0	-
2015	1.9	0.0	0.8	0.0	0.3	0.1	0.0	0.1	0.3	0.2	0.0	-
2016	1.6	0.0	0.3	0.1	0.4	0.1	0.0	0.1	0.3	0.2	0.0	-
2016 Q2	1.5	0.0	0.3	0.1	0.4	0.1	0.0	0.1	0.4	0.2	0.0	-
Q3	1.7	0.0	0.3	0.1	0.4	0.2	0.0	0.1	0.3	0.3	0.0	-
Q4	1.8	0.0	0.4	0.1	0.5	0.2	0.0	0.1	0.3	0.3	0.0	-
2017 Q1	1.8	0.0	0.3	0.1	0.4	0.2	0.0	0.2	0.4	0.2	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													
2014	100.0	85.0	15.0	3.4	15.1	6.1	24.8	2.7	2.7	1.0	13.1	24.2	7.1
2015	100.0	85.2	14.8	3.3	14.9	6.0	24.8	2.7	2.6	1.0	13.3	24.1	7.1
2016	100.0	85.4	14.6	3.2	14.8	6.0	24.9	2.8	2.6	1.0	13.5	24.1	7.0
annual percentage changes													
2014	0.6	0.6	0.1	0.0	-0.4	-1.7	0.7	0.6	-0.8	0.8	2.1	1.0	0.5
2015	1.0	1.2	0.0	-1.0	0.2	0.1	1.2	1.2	-0.4	1.8	3.1	1.0	0.9
2016	1.3	1.5	-0.2	-0.5	0.5	0.0	1.7	2.2	-0.1	1.6	2.8	1.2	0.8
2016 Q1	1.4	1.7	-0.6	-1.4	0.7	0.0	1.7	2.2	-0.2	1.6	3.3	1.2	1.5
Q2	1.4	1.7	-0.2	-0.8	0.6	-0.3	2.0	2.0	0.1	1.2	2.9	1.3	1.1
Q3	1.2	1.5	0.0	-0.1	0.5	0.0	1.7	2.0	0.0	1.9	2.7	1.2	0.5
Q4	1.2	1.3	0.3	0.2	0.4	0.5	1.6	2.4	-0.2	1.7	2.5	1.0	0.2
Hours worked													
as a percentage of total hours worked													
2014	100.0	80.3	19.7	4.4	15.6	6.8	25.7	2.9	2.7	1.0	12.8	22.0	6.3
2015	100.0	80.5	19.5	4.3	15.5	6.8	25.6	2.9	2.7	1.0	13.0	21.9	6.3
2016	100.0	80.7	19.3	4.3	15.4	6.7	25.8	2.9	2.6	1.0	13.2	21.9	6.3
annual percentage changes													
2014	0.5	0.8	-0.5	-0.5	0.0	-1.4	0.4	0.6	-0.9	0.6	2.2	1.1	0.2
2015	1.2	1.4	0.0	0.0	0.6	0.7	0.9	2.3	-0.3	2.2	3.2	1.1	0.9
2016	1.1	1.4	0.1	-0.2	0.6	-0.1	1.6	2.0	0.1	1.4	2.8	0.8	0.6
2016 Q1	1.5	1.8	-0.1	0.0	1.0	0.3	1.7	2.5	0.0	1.5	3.8	0.9	1.2
Q2	1.5	1.6	0.9	0.1	0.9	0.0	2.1	2.3	0.8	1.9	3.4	0.9	0.9
Q3	1.0	1.2	-0.1	-0.3	0.4	-0.2	1.7	1.6	0.0	1.4	2.2	0.6	-0.1
Q4	0.9	1.1	0.0	-0.3	0.5	-0.5	1.2	1.8	-0.3	1.1	2.0	0.9	-0.1
Hours worked per person employed													
annual percentage changes													
2014	0.0	0.1	-0.6	-0.6	0.4	0.3	-0.3	0.0	-0.1	-0.2	0.1	0.1	-0.3
2015	0.1	0.2	0.0	1.0	0.4	0.7	-0.2	1.1	0.1	0.4	0.1	0.1	0.0
2016	-0.1	-0.1	0.3	0.3	0.1	-0.2	-0.1	-0.2	0.2	-0.1	0.0	-0.3	-0.2
2016 Q1	0.1	0.1	0.6	1.5	0.3	0.3	0.0	0.3	0.2	0.0	0.4	-0.3	-0.3
Q2	0.1	-0.1	1.1	0.9	0.3	0.3	0.1	0.2	0.7	0.7	0.5	-0.4	-0.2
Q3	-0.3	-0.2	-0.1	-0.2	-0.1	-0.3	0.0	-0.4	0.0	-0.5	-0.5	-0.5	-0.7
Q4	-0.3	-0.2	-0.2	-0.5	0.2	-0.9	-0.4	-0.5	-0.1	-0.6	-0.4	-0.1	-0.3

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			81.8		18.2		52.2		47.8			
2014	160.334	4.6	18.637	11.6	6.1	15.217	10.4	3.420	23.7	9.932	11.5	8.705	11.8		1.4
2015	160.600	4.6	17.443	10.9	5.6	14.293	9.8	3.150	22.3	9.252	10.7	8.191	11.0		1.5
2016	161.974	4.3	16.224	10.0	5.0	13.273	9.0	2.950	20.9	8.470	9.7	7.754	10.4		1.7
2016 Q2	161.849	4.5	16.461	10.2	5.1	13.449	9.1	3.012	21.2	8.552	9.8	7.909	10.6		1.7
Q3	162.465	4.1	16.082	9.9	4.8	13.162	8.9	2.920	20.6	8.382	9.6	7.700	10.3		1.6
Q4	162.570	4.2	15.746	9.7	4.9	12.880	8.7	2.866	20.3	8.244	9.4	7.502	10.0		1.7
2017 Q1	.	.	15.373	9.5	.	12.656	8.5	2.717	19.3	7.962	9.1	7.411	9.9		1.9
2016 Nov.	-	-	15.795	9.7	-	12.895	8.7	2.899	20.5	8.291	9.5	7.503	10.0		-
Dec.	-	-	15.607	9.6	-	12.769	8.6	2.838	20.1	8.130	9.3	7.477	10.0		-
2017 Jan.	-	-	15.514	9.5	-	12.738	8.6	2.776	19.7	8.047	9.2	7.467	9.9		-
Feb.	-	-	15.331	9.4	-	12.626	8.5	2.705	19.3	7.942	9.1	7.389	9.8		-
Mar.	-	-	15.273	9.4	-	12.604	8.5	2.669	19.0	7.897	9.0	7.376	9.8		-
Apr.	-	-	15.040	9.3	-	12.423	8.4	2.617	18.7	7.729	8.9	7.311	9.7		-

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 2010	100.0	86.0	33.6	29.2	22.5	14.7	100.0	100.0	100.0	39.3	51.5	9.1	100.0
annual percentage changes													
2014	0.8	1.7	1.1	1.8	2.6	-5.3	2.0	3.1	1.5	0.7	2.4	-0.1	3.8
2015	2.1	2.3	1.0	3.6	2.5	0.8	-0.8	3.6	3.2	1.7	4.2	2.4	8.8
2016	1.4	1.5	1.8	1.6	1.1	0.1	2.2	0.3	2.2	1.3	3.0	1.8	7.2
2016 Q2	1.0	1.1	1.2	1.3	1.0	-0.8	0.3	-2.4	2.0	0.6	3.0	2.2	8.6
Q3	0.9	1.2	1.6	0.8	1.2	-0.5	3.4	-0.2	1.4	1.3	1.5	2.4	6.4
Q4	2.3	1.8	2.4	1.7	1.3	5.4	2.3	3.3	2.6	1.6	3.6	1.3	4.1
2017 Q1	1.2	1.1	2.0	1.0	-0.7	1.9	1.7	5.5	2.0	1.0	2.8	0.7	4.8
2016 Nov.	3.4	3.0	3.0	3.4	2.7	6.5	0.8	2.5	3.0	1.7	4.2	2.1	4.5
Dec.	2.7	2.0	3.8	0.5	1.8	7.4	3.5	4.9	1.7	0.8	2.6	0.4	3.4
2017 Jan.	0.4	-0.6	0.7	-1.5	-2.5	7.7	-5.5	3.0	1.6	1.1	1.8	1.4	3.7
Feb.	1.4	1.0	2.0	1.5	-1.8	2.5	5.5	6.4	1.9	1.0	2.7	0.8	4.8
Mar.	1.9	2.6	3.2	2.7	1.9	-4.8	3.6	7.1	2.5	1.1	4.0	-0.1	5.5
Apr.	.	.	.	.	.	.	.	.	2.5	2.1	3.4	-1.6	4.3
month-on-month percentage changes (s.a.)													
2016 Nov.	1.7	1.7	1.9	0.4	2.1	1.5	0.4	0.6	-0.1	-0.5	-0.1	0.4	2.4
Dec.	-1.0	-0.9	0.1	-2.2	-0.2	-1.5	0.2	3.1	-0.4	0.0	-0.2	-0.4	2.2
2017 Jan.	0.2	-0.2	-1.0	1.0	-1.3	2.8	-2.7	-2.9	0.1	0.0	-0.3	0.5	0.8
Feb.	-0.1	0.4	1.2	1.0	-1.2	-4.9	5.5	2.1	0.6	0.3	0.8	-0.4	0.8
Mar.	-0.1	0.4	0.3	0.2	2.0	-3.2	-1.1	0.9	0.2	-0.1	0.8	0.0	-0.5
Apr.	.	.	.	.	.	.	.	.	0.1	0.6	-0.4	-0.8	0.1

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
1999-13	100.0	-6.1	80.7	-12.8	-13.6	-8.7	7.0	-	51.0	52.4	52.9	52.7
2014	101.4	-3.8	80.5	-10.2	-26.6	-3.1	4.7	87.7	51.8	53.3	52.5	52.7
2015	104.2	-3.1	81.4	-6.3	-22.4	1.6	9.2	88.4	52.2	53.4	54.0	53.8
2016	104.8	-2.6	81.9	-7.8	-16.6	1.5	11.2	89.1	52.5	53.6	53.1	53.3
2016 Q2	104.2	-3.4	81.6	-7.9	-18.4	1.8	11.2	89.0	52.0	53.0	53.1	53.1
Q3	104.2	-2.9	82.0	-8.3	-16.0	0.3	10.3	89.3	52.1	53.7	52.6	52.9
Q4	106.9	-0.6	82.4	-6.5	-13.1	1.8	12.4	89.4	54.0	54.9	53.5	53.8
2017 Q1	108.0	1.1	82.6	-5.5	-11.0	2.0	13.2	89.4	55.6	56.9	55.1	55.6
2016 Dec.	107.8	0.0	-	-5.2	-12.1	3.5	13.0	-	54.9	56.1	53.7	54.4
2017 Jan.	108.0	0.8	82.5	-4.9	-12.9	2.3	12.9	89.4	55.2	56.1	53.7	54.4
Feb.	108.0	1.3	-	-6.4	-10.1	1.8	13.9	-	55.4	57.3	55.5	56.0
Mar.	108.0	1.3	-	-5.1	-9.9	1.8	12.8	-	56.2	57.5	56.0	56.4
Apr.	109.7	2.6	82.6	-3.6	-6.0	3.1	14.2	89.4	56.7	57.9	56.4	56.8
May	109.2	2.8	-	-3.3	-5.7	2.0	13.0	-	57.0	58.3	56.3	56.8

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
2013	12.5	95.6	-0.5	1.1	-5.0	1.0	-1.2	32.6	4.4	129.6	2.1	-0.4	0.7
2014	12.6	94.7	0.7	1.8	1.0	2.6	1.0	33.0	4.9	131.0	2.6	6.8	1.4
2015	12.4	94.0	1.8	2.1	2.5	3.3	2.3	34.5	6.6	133.1	3.9	2.8	2.1
2016 Q1	12.4	93.5	2.4	1.9	3.9	1.9	3.1	34.1	6.8	132.1	3.9	4.3	2.1
Q2	12.5	93.5	2.4	2.2	6.6	3.1	3.6	33.9	7.0	133.3	3.7	3.8	2.0
Q3	12.5	93.5	1.6	2.2	5.7	4.2	3.9	34.0	7.3	132.1	3.4	3.8	1.8
Q4	12.3	93.5	1.2	2.0	5.6	4.4	4.4	33.9	7.4	133.4	3.4	8.1	1.8

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
2016 Q2	895.0	793.4	101.6	519.9	421.1	193.0	178.1	155.7	139.1	26.5	55.1	7.1	7.3
Q3	902.5	812.8	89.6	524.3	431.4	197.0	177.6	154.6	136.4	26.7	67.4	6.6	5.5
Q4	935.2	861.1	74.1	542.4	453.3	199.8	204.8	165.2	138.7	27.9	64.4	9.5	10.1
2017 Q1	940.6	842.4	98.2	555.8	471.9	204.5	179.0	153.0	134.9	27.3	56.6	6.7	6.3
2016 Oct.	307.4	284.9	22.5	176.9	149.1	67.0	68.3	54.5	45.6	9.0	21.9	1.9	2.7
Nov.	315.6	288.4	27.3	181.8	151.6	66.6	69.0	58.4	45.9	8.9	21.9	2.3	2.8
Dec.	312.2	287.8	24.4	183.7	152.6	66.2	67.5	52.3	47.1	10.1	20.6	5.3	4.6
2017 Jan.	313.2	286.9	26.3	182.8	157.3	67.4	63.6	53.9	43.0	9.1	23.1	2.0	2.2
Feb.	313.8	276.0	37.8	186.3	156.9	69.1	59.0	49.7	45.9	8.7	14.2	2.8	1.6
Mar.	313.6	279.5	34.1	186.7	157.7	68.0	56.5	49.4	46.0	9.5	19.4	1.9	2.5
12-month cumulated transactions													
2017 Mar.	3,673.3	3,309.8	363.6	2,142.4	1,777.7	794.3	739.5	628.4	549.0	108.3	243.6	29.9	29.2
12-month cumulated transactions as a percentage of GDP													
2017 Mar.	34.0	30.6	3.4	19.8	16.4	7.3	6.8	5.8	5.1	1.0	2.3	0.3	0.3

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)													
2016 Q2	0.0	-3.4	504.6	231.6	106.1	153.4	425.1	433.5	237.3	72.6	115.9	322.4	41.9
Q3	-0.1	-1.7	508.9	237.2	103.3	154.2	426.3	443.2	244.1	72.3	117.4	327.8	43.8
Q4	2.2	2.3	525.3	244.5	108.4	157.4	439.4	460.0	256.4	74.0	119.1	334.1	50.3
2017 Q1	10.2	12.4	537.1	.	.	.	447.2	479.8	.	.	.	338.6	.
2016 Oct.	-4.5	-2.8	170.3	79.0	34.7	51.5	141.7	150.6	83.0	24.9	39.4	110.5	16.1
Nov.	5.5	5.3	175.8	82.3	35.1	53.2	147.0	153.5	86.1	24.1	39.8	111.8	16.5
Dec.	6.1	4.7	179.2	83.1	38.6	52.7	150.7	155.9	87.3	25.0	39.9	111.8	17.7
2017 Jan.	12.6	17.3	177.3	84.5	34.8	53.2	145.9	161.9	93.0	25.9	39.6	113.8	21.0
Feb.	4.9	6.4	178.7	85.1	35.7	52.6	149.6	159.9	92.3	25.2	39.0	113.1	20.7
Mar.	13.1	13.7	181.1	.	.	.	151.6	158.0	.	.	.	111.7	.
Volume indices (2000 = 100; annual percentage changes for columns 1 and 2)													
2016 Q2	2.4	5.1	118.0	114.3	117.7	123.9	117.7	108.2	107.0	107.0	111.4	111.3	99.8
Q3	0.7	1.8	118.2	116.1	113.5	124.0	117.3	109.2	108.1	106.3	111.8	112.2	100.8
Q4	1.4	0.7	120.4	118.1	118.0	124.8	119.8	109.6	108.7	105.9	111.5	112.0	105.2
2017 Q1	.	.	.	.	.	.	.	.	.	.	.	.	.
2016 Sep.	2.7	1.2	118.6	117.4	113.7	124.3	118.0	108.7	107.9	104.6	111.5	111.5	97.7
Oct.	-4.8	-2.1	118.1	115.2	113.9	124.3	116.8	109.5	108.0	108.3	111.9	112.5	104.0
Nov.	4.7	4.6	121.0	119.8	115.4	126.0	120.2	110.7	110.8	104.7	111.9	113.0	108.2
Dec.	4.7	-0.3	122.0	119.2	124.9	124.2	122.4	108.6	107.4	104.8	110.8	110.6	103.3
2017 Jan.	8.8	6.4	119.6	119.4	113.3	124.1	117.7	109.9	111.1	107.8	107.3	111.1	113.6
Feb.	0.7	-3.7	120.4	120.6	115.5	122.3	120.7	109.0	110.3	104.8	107.6	111.0	112.9

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 2017	100.0	100.0	70.9	55.4	44.6	100.0	12.1	7.5	26.3	9.5	44.6	86.8	13.2
2014	100.0	0.4	0.8	-0.2	1.2	-	-	-	-	-	-	0.2	1.9
2015	100.0	0.0	0.8	-0.8	1.2	-	-	-	-	-	-	-0.1	0.9
2016	100.2	0.2	0.9	-0.4	1.1	-	-	-	-	-	-	0.2	0.2
2016 Q2	100.4	-0.1	0.8	-0.9	1.0	0.4	0.2	1.0	0.0	2.0	0.2	-0.1	0.0
Q3	100.3	0.3	0.8	-0.4	1.1	0.3	0.1	1.1	0.0	0.3	0.4	0.3	0.3
Q4	101.0	0.7	0.8	0.4	1.1	0.4	0.3	0.0	0.1	2.4	0.3	0.8	0.3
2017 Q1	101.0	1.8	0.8	2.3	1.1	0.6	0.3	1.9	0.1	3.3	0.3	2.0	0.5
2016 Dec.	101.3	1.1	0.9	1.0	1.3	0.4	0.1	0.7	0.0	1.8	0.3	1.3	0.3
2017 Jan.	100.5	1.8	0.9	2.2	1.2	0.3	0.1	0.8	0.1	2.5	0.0	2.0	0.4
Feb.	100.8	2.0	0.9	2.6	1.3	0.2	0.1	1.7	-0.1	-0.2	0.2	2.2	0.5
Mar.	101.7	1.5	0.7	2.0	1.0	-0.1	0.1	-1.6	0.0	-0.8	0.1	1.7	0.7
Apr.	102.0	1.9	1.2	1.9	1.8	0.2	0.2	-0.5	0.0	0.3	0.4	2.0	1.3
May [3)]	101.9	1.4	0.9	.	1.3	-0.1	0.4	-0.1	0.0	-1.2	-0.1	.	.

	Goods						Services					
	Food (including alcoholic beverages and tobacco)			Industrial goods			Housing		Transport	Communication	Recreation and personal	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 2017	19.6	12.1	7.5	35.8	26.3	9.5	10.7	6.5	7.3	3.2	15.1	8.2
2014	0.5	1.2	-0.8	-0.5	0.1	-1.9	1.7	1.4	1.7	-2.8	1.5	1.3
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
2016 Q2	0.9	0.5	1.4	-1.9	0.5	-7.7	1.1	1.0	0.6	0.0	1.3	1.2
Q3	1.1	0.5	2.1	-1.3	0.3	-5.1	1.1	1.0	0.9	0.0	1.5	1.3
Q4	0.8	0.6	1.0	0.2	0.3	0.2	1.2	1.2	1.2	-0.1	1.3	1.2
2017 Q1	2.0	0.9	4.0	2.4	0.3	8.2	1.3	1.2	1.7	-1.1	1.4	0.7
2016 Dec.	1.2	0.7	2.1	0.9	0.3	2.6	1.2	1.3	1.4	-0.3	1.6	1.2
2017 Jan.	1.8	0.7	3.5	2.5	0.5	8.1	1.3	1.3	1.3	-1.0	1.7	0.7
Feb.	2.5	0.8	5.3	2.6	0.2	9.3	1.2	1.2	1.9	-0.9	1.7	0.8
Mar.	1.8	1.0	3.1	2.1	0.3	7.4	1.3	1.2	1.9	-1.2	0.9	0.8
Apr.	1.5	1.1	2.2	2.2	0.3	7.6	1.3	1.3	3.3	-1.2	2.8	0.8
May [3)]	1.5	1.5	1.6	.	0.3	4.6	.	.	.	.	.	.

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).

3) Estimate based on provisional national data, as well as on early information on energy prices.

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: 2010 = 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 2010	100.0	100.0	78.1	72.1	29.4	20.1	22.6	13.8	8.9	27.9			
2014	106.9	-1.5	-0.9	-0.3	-1.1	0.4	0.1	-0.1	0.3	-4.3	0.3	0.4	1.4
2015	104.0	-2.7	-2.4	-0.5	-1.3	0.7	-0.6	-0.9	0.1	-8.2	0.2	1.6	4.5
2016	101.6	-2.3	-1.5	-0.5	-1.7	0.4	0.0	0.0	0.1	-6.9	0.4	3.3	5.4
2016 Q2	100.9	-3.8	-2.8	-1.1	-2.7	0.4	-0.5	-0.7	0.1	-10.7	0.2	3.1	3.1
Q3	101.9	-2.0	-1.3	-0.6	-1.8	0.4	0.0	0.0	0.2	-5.9	0.4	3.4	8.8
Q4	103.1	0.4	1.0	0.4	0.0	0.5	0.8	1.3	0.1	0.4	1.1	3.8	4.3
2017 Q1	104.7	4.1	4.0	2.0	3.1	0.8	1.7	2.6	0.2	10.0	.	.	.
2016 Nov.	102.9	0.0	0.5	0.4	0.1	0.5	0.7	1.3	0.2	-0.8	-	-	-
Dec.	103.7	1.6	2.3	0.9	0.8	0.6	1.1	1.8	0.0	3.8	-	-	-
2017 Jan.	104.8	3.9	3.7	1.5	2.1	0.8	1.5	2.2	0.2	10.4	-	-	-
Feb.	104.8	4.5	4.4	2.1	3.4	0.8	1.7	2.6	0.2	11.4	-	-	-
Mar.	104.5	3.9	4.0	2.4	3.9	0.9	1.9	3.0	0.3	8.3	-	-	-
Apr.	104.5	4.3	3.9	2.5	4.0	0.9	2.3	3.4	0.3	9.1	-	-	-

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
2014	104.6	0.9	0.6	0.5	0.8	0.7	-0.7	-1.5	74.1	-3.4	2.0	-8.5	-0.4	4.6	-6.4
2015	105.9	1.2	0.3	0.2	0.5	0.7	0.2	-1.8	47.1	0.0	4.2	-4.5	2.9	7.0	-2.7
2016	106.7	0.8	0.5	0.3	0.7	0.8	-1.4	-2.4	39.9	-3.5	-3.9	-3.2	-7.3	-10.3	-2.9
2016 Q2	106.5	0.8	0.2	0.0	0.6	0.6	-2.5	-4.2	40.8	-9.0	-5.7	-12.5	-12.5	-12.6	-12.3
Q3	106.7	0.7	0.6	0.2	0.7	0.7	-1.6	-2.2	41.0	-0.5	-2.1	1.4	-5.8	-10.6	1.3
Q4	107.2	0.7	0.8	0.8	0.8	1.2	0.0	0.1	46.5	9.1	1.1	18.6	3.3	-6.7	18.5
2017 Q1	107.2	0.7	1.2	1.6	1.0	1.7	2.7	4.3	50.8	18.3	5.9	33.2	13.0	0.1	32.4
2016 Dec.	-	-	-	-	-	-	-	-	51.3	15.7	3.9	30.2	10.6	-1.4	28.8
2017 Jan.	-	-	-	-	-	-	-	-	51.6	19.2	7.2	34.0	13.1	0.9	32.0
Feb.	-	-	-	-	-	-	-	-	52.2	21.4	8.0	37.4	15.5	1.7	36.0
Mar.	-	-	-	-	-	-	-	-	48.7	14.6	2.7	28.5	10.5	-2.2	29.3
Apr.	-	-	-	-	-	-	-	-	49.6	11.4	1.2	23.2	9.9	-0.5	24.8
May	-	-	-	-	-	-	-	-	46.0	6.8	-2.5	17.8	7.0	-1.7	19.7

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
1999-13	4.7	-	-	-2.0	34.9	57.7	56.7	-	49.9
2014	-0.9	-1.5	0.9	-17.4	15.0	49.6	53.5	49.7	48.2
2015	-2.8	1.3	2.7	-13.2	-0.3	48.9	53.5	49.6	49.0
2016	-0.4	1.7	4.4	-7.3	0.2	49.8	53.9	49.3	49.6
2016 Q2	-1.0	1.9	4.6	-8.1	-1.4	47.5	54.4	48.5	49.0
Q3	-0.2	1.0	4.5	-6.6	0.5	51.4	54.0	49.6	49.8
Q4	4.6	3.1	4.9	-5.4	2.4	58.6	54.9	51.6	50.5
2017 Q1	9.0	5.5	6.4	-3.7	12.9	67.8	56.7	55.0	51.4
2016 Dec.	5.4	4.0	4.9	-5.1	3.7	63.2	56.0	52.5	51.4
2017 Jan.	8.3	4.9	6.7	-5.1	9.2	67.0	56.4	54.0	50.9
Feb.	9.0	6.3	6.4	-3.1	13.8	68.3	56.9	55.4	51.1
Mar.	9.6	5.1	6.1	-2.9	15.6	68.1	56.8	55.6	52.2
Apr.	8.2	5.5	6.7	2.3	13.5	67.1	56.5	55.4	51.7
May	8.2	3.7	5.4	-0.6	11.8	62.0	55.9	54.1	51.7

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	
2014	102.6	1.2	1.3	1.2	1.2	1.2	1.7
2015	104.2	1.5	1.9	0.5	1.5	1.6	1.5
2016	105.7	1.4	1.4	1.4	1.3	1.6	1.4
2016 Q2	109.1	1.1	0.9	1.4	0.9	1.3	1.5
Q3	102.5	1.4	1.6	1.1	1.2	1.7	1.5
Q4	112.2	1.6	1.6	1.5	1.7	1.5	1.4
2017 Q1	.	.	.	.	.	.	1.5

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												
2014	104.5	0.7	-1.3	-0.9	1.2	0.5	-0.9	2.2	1.7	1.0	1.6	1.5
2015	104.8	0.3	-0.1	-2.2	0.8	0.8	0.6	0.2	3.6	1.9	1.2	1.8
2016	105.7	0.8	1.8	0.1	-0.2	0.7	0.4	1.6	4.1	1.1	1.4	1.8
2016 Q1	105.5	1.0	0.3	0.3	-0.1	0.9	1.1	1.4	4.5	2.1	1.6	2.7
Q2	105.6	0.9	1.5	0.0	-0.6	1.2	0.7	1.8	3.8	0.6	1.6	1.8
Q3	105.8	0.8	2.0	0.3	-0.6	0.7	-0.3	1.8	3.8	0.6	1.4	1.5
Q4	106.1	0.8	3.8	-0.4	0.5	0.6	0.2	1.4	4.3	1.1	1.2	1.5
Compensation per employee												
2014	106.5	1.3	0.2	2.0	1.8	1.1	2.2	1.7	1.5	1.6	1.1	1.1
2015	107.9	1.3	1.4	1.7	0.8	1.5	2.4	0.6	2.5	1.6	1.1	1.0
2016	109.3	1.3	0.7	1.1	1.4	1.3	1.2	1.4	3.4	1.4	1.5	2.1
2016 Q1	108.9	1.3	0.7	1.3	1.3	1.3	1.3	1.7	3.6	1.5	1.3	2.1
Q2	109.1	1.2	1.0	0.8	1.3	1.3	1.2	1.0	3.5	1.3	1.3	1.8
Q3	109.5	1.3	0.2	1.2	1.6	1.2	1.0	1.6	2.8	1.0	1.6	2.2
Q4	110.1	1.5	1.1	1.2	1.6	1.5	1.3	1.2	3.5	1.6	1.7	2.5
Labour productivity per person employed												
2014	102.0	0.7	1.5	2.9	0.5	0.6	3.1	-0.5	-0.2	0.5	-0.5	-0.4
2015	102.9	1.0	1.5	4.0	0.0	0.7	1.8	0.4	-1.0	-0.3	-0.1	-0.8
2016	103.4	0.5	-1.1	1.0	1.6	0.6	0.8	-0.2	-0.7	0.3	0.0	0.3
2016 Q1	103.3	0.3	0.4	1.1	1.4	0.4	0.1	0.3	-0.9	-0.5	-0.3	-0.6
Q2	103.2	0.2	-0.5	0.7	1.9	0.1	0.5	-0.8	-0.3	0.7	-0.3	0.0
Q3	103.5	0.5	-1.8	0.8	2.2	0.5	1.4	-0.1	-0.9	0.4	0.2	0.7
Q4	103.8	0.7	-2.6	1.6	1.1	0.9	1.1	-0.2	-0.7	0.4	0.5	1.0
Compensation per hour worked												
2014	108.5	1.2	1.2	1.5	1.4	1.2	2.1	1.7	1.3	1.2	0.9	1.2
2015	109.7	1.1	1.3	1.2	0.1	1.4	1.2	0.7	2.1	1.3	1.0	1.0
2016	111.3	1.5	0.2	1.0	1.8	1.4	1.3	1.3	3.6	1.3	1.8	2.7
2016 Q1	110.5	1.2	-1.0	0.9	1.2	1.2	1.0	1.4	3.0	1.0	1.6	2.6
Q2	110.7	1.2	0.1	0.4	1.3	1.3	0.9	0.7	3.2	1.1	1.9	2.5
Q3	111.3	1.6	0.7	1.2	2.2	1.1	1.3	1.7	3.6	1.2	2.1	3.3
Q4	112.1	1.8	1.3	1.0	2.3	1.9	1.8	1.4	4.8	1.7	1.7	3.2
Hourly labour productivity												
2014	104.2	0.7	2.1	2.5	0.2	0.9	3.1	-0.4	0.0	0.4	-0.6	-0.1
2015	105.0	0.8	0.5	3.5	-0.6	0.9	0.7	0.3	-1.5	-0.3	-0.2	-0.8
2016	105.7	0.6	-1.4	1.0	1.8	0.7	1.0	-0.4	-0.5	0.3	0.4	0.5
2016 Q1	105.3	0.2	-1.0	0.8	1.1	0.4	-0.2	0.1	-0.8	-1.0	0.0	-0.3
Q2	105.1	0.2	-1.4	0.4	1.6	0.1	0.3	-1.5	-1.0	0.2	0.2	0.2
Q3	105.6	0.8	-1.6	0.9	2.4	0.5	1.8	-0.2	-0.4	0.9	0.7	1.4
Q4	106.0	1.0	-2.2	1.5	2.0	1.3	1.7	-0.1	-0.1	0.9	0.5	1.3

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												
2014	969.5	4,970.5	5,939.9	1,581.7	2,147.6	3,729.4	9,669.3	121.5	422.2	107.3	651.0	10,320.3
2015	1,036.5	5,566.3	6,602.8	1,439.2	2,159.8	3,599.1	10,201.8	74.6	479.0	73.6	627.2	10,829.1
2016	1,073.1	6,117.0	7,190.1	1,320.3	2,175.8	3,496.1	10,686.3	70.4	519.6	96.7	686.7	11,373.0
2016 Q2	1,054.6	5,821.2	6,875.8	1,411.0	2,170.0	3,581.0	10,456.8	84.2	481.7	94.8	660.7	11,117.5
Q3	1,066.6	5,946.7	7,013.3	1,393.3	2,172.6	3,565.8	10,579.2	80.5	494.2	93.9	668.6	11,247.8
Q4	1,073.1	6,117.0	7,190.1	1,320.3	2,175.8	3,496.1	10,686.3	70.4	519.6	96.7	686.7	11,373.0
2017 Q1	1,088.6	6,303.2	7,391.8	1,306.1	2,180.0	3,486.0	10,877.8	73.5	530.3	104.5	708.4	11,586.2
2016 Nov.	1,075.2	6,069.6	7,144.7	1,350.7	2,171.9	3,522.6	10,667.4	72.5	504.0	99.0	675.6	11,342.9
Dec.	1,073.1	6,117.0	7,190.1	1,320.3	2,175.8	3,496.1	10,686.3	70.4	519.6	96.7	686.7	11,373.0
2017 Jan.	1,081.8	6,154.8	7,236.6	1,329.8	2,178.1	3,507.8	10,744.4	75.1	513.2	98.6	686.9	11,431.3
Feb.	1,086.1	6,208.4	7,294.5	1,325.2	2,178.0	3,503.2	10,797.7	66.7	505.9	99.7	672.4	11,470.1
Mar.	1,088.6	6,303.2	7,391.8	1,306.1	2,180.0	3,486.0	10,877.8	73.5	530.3	104.5	708.4	11,586.2
Apr. [p]	1,092.3	6,344.4	7,436.7	1,279.6	2,183.0	3,462.6	10,899.3	73.2	511.5	82.7	667.4	11,566.8
Transactions												
2014	59.0	374.9	433.9	-91.8	3.7	-88.1	345.8	3.6	10.4	12.9	26.8	372.7
2015	65.9	562.6	628.5	-135.4	12.3	-123.0	505.5	-48.0	51.4	-26.6	-23.1	482.3
2016	36.7	544.6	581.3	-107.9	16.0	-91.9	489.4	-4.3	40.4	17.9	54.0	543.4
2016 Q2	5.0	104.4	109.3	-12.7	7.2	-5.5	103.9	-1.4	15.5	-1.4	12.7	116.6
Q3	12.0	127.9	139.9	-15.7	2.3	-13.5	126.5	-3.7	12.9	-2.2	7.1	133.5
Q4	6.5	156.2	162.6	-65.4	3.3	-62.1	100.5	-10.4	25.3	2.2	17.2	117.7
2017 Q1	15.5	188.7	204.2	-11.7	4.1	-7.6	196.6	3.1	10.8	7.2	21.2	217.8
2016 Nov.	2.8	80.9	83.7	-11.9	-1.3	-13.2	70.5	-2.1	2.0	8.2	8.1	78.6
Dec.	-2.1	46.9	44.7	-28.5	3.8	-24.6	20.1	-2.1	15.5	-2.2	11.2	31.3
2017 Jan.	8.7	41.5	50.2	12.0	2.2	14.2	64.5	4.7	-6.3	1.2	-0.4	64.1
Feb.	4.3	50.1	54.4	-5.2	-0.2	-5.4	49.0	-8.5	-7.3	1.0	-14.8	34.3
Mar.	2.4	97.1	99.5	-18.4	2.0	-16.4	83.1	6.9	24.4	5.1	36.4	119.5
Apr. [p]	3.7	45.8	49.5	-24.9	3.2	-21.7	27.8	-0.2	-18.8	-22.0	-41.0	-13.2
Growth rates												
2014	6.5	8.4	8.0	-5.4	0.2	-2.3	3.7	2.9	2.5	19.3	4.3	3.8
2015	6.8	11.3	10.5	-8.6	0.6	-3.3	5.2	-39.1	12.0	-25.5	-3.5	4.7
2016	3.5	9.8	8.8	-7.5	0.7	-2.6	4.8	-5.8	8.4	24.1	8.6	5.0
2016 Q2	4.0	9.7	8.8	-4.1	0.6	-1.3	5.1	1.1	9.2	-3.3	6.0	5.1
Q3	3.7	9.3	8.4	-3.3	0.5	-1.0	5.0	-12.8	8.0	13.9	5.7	5.1
Q4	3.5	9.8	8.8	-7.5	0.7	-2.6	4.8	-5.8	8.4	24.1	8.6	5.0
2017 Q1	3.7	10.1	9.1	-7.4	0.8	-2.5	5.1	-14.4	13.9	6.0	9.0	5.3
2016 Nov.	3.8	9.4	8.5	-5.4	0.6	-1.8	4.9	-15.8	4.5	12.5	2.9	4.7
Dec.	3.5	9.8	8.8	-7.5	0.7	-2.6	4.8	-5.8	8.4	24.1	8.6	5.0
2017 Jan.	3.6	9.3	8.4	-6.7	0.8	-2.2	4.7	-7.3	8.5	12.4	7.0	4.8
Feb.	3.9	9.2	8.4	-6.2	0.7	-2.1	4.8	-24.4	7.9	7.9	3.5	4.7
Mar.	3.7	10.1	9.1	-7.4	0.8	-2.5	5.1	-14.4	13.9	6.0	9.0	5.3
Apr. [p]	4.2	10.1	9.2	-8.6	0.9	-2.8	5.1	-16.7	8.5	-15.4	1.5	4.9

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													
2014	1,863.4	1,366.3	365.1	112.6	19.4	5,555.6	2,749.5	812.1	1,991.1	2.8	847.2	222.2	332.9
2015	1,950.8	1,503.1	321.8	117.5	8.4	5,748.9	3,059.7	695.1	1,991.7	2.4	949.7	225.8	364.7
2016	2,077.2	1,656.4	293.9	118.3	8.6	6,049.8	3,399.6	643.6	2,004.8	1.7	979.5	196.5	380.6
2016 Q2	2,034.8	1,594.2	314.0	118.2	8.4	5,904.1	3,214.2	688.8	1,998.1	3.0	957.0	210.7	379.9
Q3	2,069.0	1,622.9	317.7	119.3	9.1	5,977.7	3,301.8	672.0	2,001.3	2.6	953.9	206.2	386.3
Q4	2,077.2	1,656.4	293.9	118.3	8.6	6,049.8	3,399.6	643.6	2,004.8	1.7	979.5	196.5	380.6
2017 Q1	2,170.7	1,743.4	303.6	117.4	6.4	6,139.6	3,503.1	620.0	2,013.7	2.7	972.4	190.9	389.1
2016 Nov.	2,086.3	1,654.7	304.8	118.4	8.5	6,029.6	3,371.5	652.6	2,002.9	2.5	959.4	206.3	383.1
Dec.	2,077.2	1,656.4	293.9	118.3	8.6	6,049.8	3,399.6	643.6	2,004.8	1.7	979.5	196.5	380.6
2017 Jan.	2,121.3	1,697.8	299.2	117.3	7.0	6,087.8	3,438.6	636.0	2,010.5	2.7	940.9	194.6	392.9
Feb.	2,142.8	1,717.2	301.5	117.3	6.8	6,111.8	3,469.5	627.5	2,012.0	2.8	937.0	195.4	391.3
Mar.	2,170.7	1,743.4	303.6	117.4	6.4	6,139.6	3,503.1	620.0	2,013.7	2.7	972.4	190.9	389.1
Apr. [p]	2,164.5	1,745.6	294.9	117.2	6.8	6,156.7	3,524.1	611.6	2,017.6	3.4	962.7	199.7	396.7
Transactions													
2014	68.7	91.1	-26.7	1.5	2.8	140.7	208.8	-65.0	-1.4	-1.7	52.7	7.3	21.0
2015	83.9	123.7	-33.5	4.9	-11.2	193.6	303.0	-109.9	0.9	-0.4	84.0	-0.1	30.3
2016	129.7	153.3	-24.1	0.3	0.2	302.0	335.5	-46.1	13.4	-0.8	29.0	-29.3	17.1
2016 Q2	27.6	36.6	-8.9	1.1	-1.1	75.5	76.2	-5.1	4.0	0.4	-0.8	-8.5	3.7
Q3	35.2	29.9	3.9	0.7	0.7	73.8	87.7	-16.6	3.2	-0.5	-0.2	-4.2	6.2
Q4	5.2	28.6	-21.8	-1.1	-0.5	71.8	93.1	-23.8	3.4	-0.9	21.6	-10.0	-4.9
2017 Q1	96.3	88.4	11.1	-1.0	-2.2	90.0	103.9	-23.9	8.8	1.1	-5.6	-5.1	8.6
2016 Nov.	24.0	26.8	-3.3	-1.0	1.5	28.6	36.2	-7.4	0.1	-0.3	23.5	-0.4	-10.1
Dec.	-9.4	1.2	-10.7	0.0	0.1	19.9	27.9	-9.1	1.9	-0.8	21.9	-9.8	-2.3
2017 Jan.	46.7	43.2	6.1	-1.0	-1.6	38.8	39.6	-7.4	5.6	1.0	-35.6	-1.7	12.3
Feb.	19.9	17.9	2.3	0.0	-0.2	22.9	30.4	-9.1	1.5	0.1	-6.3	0.9	-1.2
Mar.	29.7	27.3	2.7	0.0	-0.4	28.3	34.0	-7.4	1.7	-0.1	36.4	-4.3	-2.5
Apr. [p]	-2.7	4.1	-7.0	-0.2	0.5	18.2	21.8	-8.2	4.0	0.7	-8.0	9.0	7.3
Growth rates													
2014	4.0	7.6	-6.6	1.3	15.9	2.6	8.2	-7.4	-0.1	-37.8	6.6	3.9	7.0
2015	4.5	9.0	-9.4	4.4	-57.4	3.5	11.0	-13.6	0.0	-15.1	9.7	0.0	9.1
2016	6.7	10.2	-7.6	0.2	2.2	5.3	11.0	-6.7	0.7	-31.2	3.1	-13.0	4.7
2016 Q2	8.0	11.1	-3.0	3.9	-27.8	4.6	10.4	-5.9	0.1	0.3	4.0	-8.5	10.3
Q3	7.5	9.9	-1.3	1.8	-8.5	5.1	10.6	-4.9	0.4	-18.2	0.9	-5.7	7.7
Q4	6.7	10.2	-7.6	0.2	2.2	5.3	11.0	-6.7	0.7	-31.2	3.1	-13.0	4.7
2017 Q1	8.2	11.8	-4.9	-0.3	-32.6	5.3	11.5	-10.0	1.0	2.1	1.6	-12.7	3.6
2016 Nov.	7.1	10.1	-3.8	0.1	-5.3	5.4	11.1	-5.8	0.7	-32.6	0.3	-8.0	3.1
Dec.	6.7	10.2	-7.6	0.2	2.2	5.3	11.0	-6.7	0.7	-31.2	3.1	-13.0	4.7
2017 Jan.	7.1	10.5	-5.5	-0.1	-26.8	5.5	11.4	-7.7	0.9	-19.8	-1.2	-13.5	5.6
Feb.	7.6	10.9	-4.7	-0.3	-26.7	5.4	11.5	-8.9	0.9	-4.8	-2.2	-15.3	5.1
Mar.	8.2	11.8	-4.9	-0.3	-32.6	5.3	11.5	-10.0	1.0	2.1	1.6	-12.7	3.6
Apr. [p]	7.1	10.6	-6.7	-0.4	-20.0	5.3	11.4	-11.0	1.2	-5.0	1.4	-7.1	5.2

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								
					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		
	Total	Loans	Debt securities	Total		Adjusted loans [2)]						
	1	2	3	4	5	6	7	8	9	10	11	12
Outstanding amounts												
2014	3,615.6	1,135.0	2,478.5	12,504.8	10,454.5	10,726.7	4,316.6	5,200.7	808.1	129.0	1,280.0	770.3
2015	3,904.2	1,112.3	2,789.5	12,599.4	10,512.0	10,807.4	4,290.7	5,307.6	790.1	123.5	1,305.1	782.3
2016	4,397.6	1,082.0	3,302.4	12,843.0	10,674.1	10,981.8	4,313.4	5,410.1	838.2	112.5	1,384.6	784.3
2016 Q2	4,191.8	1,112.5	3,066.2	12,664.0	10,566.1	10,870.4	4,312.7	5,348.3	801.2	103.9	1,342.5	755.4
Q3	4,272.2	1,105.2	3,153.7	12,768.5	10,623.5	10,927.4	4,302.5	5,379.3	832.6	109.1	1,364.5	780.5
Q4	4,397.6	1,082.0	3,302.4	12,843.0	10,674.1	10,981.8	4,313.4	5,410.1	838.2	112.5	1,384.6	784.3
2017 Q1	4,438.5	1,070.4	3,353.9	12,976.8	10,757.7	11,055.7	4,333.8	5,459.2	851.7	112.9	1,426.9	792.2
2016 Nov.	4,320.9	1,092.5	3,215.0	12,848.3	10,699.2	10,981.6	4,336.1	5,407.4	839.8	115.9	1,378.2	770.8
Dec.	4,397.6	1,082.0	3,302.4	12,843.0	10,674.1	10,981.8	4,313.4	5,410.1	838.2	112.5	1,384.6	784.3
2017 Jan.	4,383.3	1,087.3	3,282.3	12,882.2	10,696.5	10,995.8	4,329.3	5,422.9	829.8	114.6	1,399.5	786.2
Feb.	4,399.6	1,073.3	3,312.5	12,913.4	10,720.0	11,012.1	4,334.6	5,443.9	829.9	111.6	1,400.4	793.0
Mar.	4,438.5	1,070.4	3,353.9	12,976.8	10,757.7	11,055.7	4,333.8	5,459.2	851.7	112.9	1,426.9	792.2
Apr. [p]	4,466.6	1,074.1	3,378.2	12,958.4	10,743.0	11,043.1	4,337.0	5,467.8	824.0	114.3	1,426.7	788.6
Transactions												
2014	73.8	16.4	57.4	-101.9	-47.1	-32.4	-60.6	-14.9	16.7	11.7	-89.8	35.0
2015	284.9	-21.1	305.7	86.9	58.2	75.9	-13.8	98.3	-20.5	-5.7	25.1	3.5
2016	458.9	-34.9	493.7	316.8	233.4	253.2	78.4	119.8	46.3	-11.1	80.0	3.4
2016 Q2	116.4	-8.9	125.2	54.8	22.1	60.2	19.3	14.5	-6.7	-5.0	31.1	1.6
Q3	69.3	-7.3	76.3	112.7	70.3	73.6	3.9	33.8	27.5	5.2	20.3	22.1
Q4	153.2	-20.3	173.6	80.0	61.7	65.3	19.8	35.3	3.4	3.3	17.6	0.7
2017 Q1	74.3	-11.0	84.7	148.8	98.9	92.6	29.1	51.6	17.8	0.5	40.9	8.9
2016 Nov.	45.3	-7.0	52.2	36.0	37.5	20.7	16.0	18.9	1.3	1.3	5.4	-6.9
Dec.	69.1	-7.8	77.1	1.9	-9.5	15.2	-14.9	9.2	-0.3	-3.5	4.5	7.0
2017 Jan.	20.0	5.2	14.2	52.1	30.5	24.1	18.8	14.0	-4.4	2.1	16.0	5.6
Feb.	7.6	-13.0	20.5	23.9	20.0	12.8	3.8	20.0	-0.9	-3.0	-0.5	4.4
Mar.	46.8	-3.2	50.0	72.8	48.5	55.8	6.5	17.6	23.0	1.3	25.5	-1.1
Apr. [p]	28.1	3.6	24.3	-7.8	-4.7	-3.2	8.2	11.2	-25.6	1.4	-0.4	-2.7
Growth rates												
2014	2.1	1.5	2.4	-0.8	-0.4	-0.3	-1.4	-0.3	1.8	11.9	-6.6	4.4
2015	7.9	-1.9	12.3	0.7	0.6	0.7	-0.3	1.9	-2.5	-4.4	2.0	0.4
2016	11.7	-3.1	17.6	2.5	2.2	2.4	1.8	2.3	5.9	-9.0	6.1	0.5
2016 Q2	11.7	-2.8	18.1	1.6	1.2	1.6	1.3	1.9	0.5	-23.6	7.2	-2.9
Q3	10.1	-2.5	15.3	2.0	1.9	2.1	1.4	2.1	5.4	-10.7	3.5	0.8
Q4	11.7	-3.1	17.6	2.5	2.2	2.4	1.8	2.3	5.9	-9.0	6.1	0.5
2017 Q1	10.2	-4.2	15.7	3.1	2.4	2.7	1.7	2.5	5.2	3.6	8.4	4.4
2016 Nov.	10.7	-3.0	16.3	2.4	2.1	2.2	1.8	2.1	4.4	-6.7	7.3	-1.0
Dec.	11.7	-3.1	17.6	2.5	2.2	2.4	1.8	2.3	5.9	-9.0	6.1	0.5
2017 Jan.	10.6	-2.9	15.9	2.7	2.2	2.4	1.7	2.4	5.1	-8.6	6.8	2.6
Feb.	9.9	-3.9	15.2	2.6	2.0	2.3	1.4	2.4	4.4	-11.4	6.4	3.6
Mar.	10.2	-4.2	15.7	3.1	2.4	2.7	1.7	2.5	5.2	3.6	8.4	4.4
Apr. [p]	9.7	-4.2	15.0	2.9	2.2	2.6	1.6	2.6	2.8	1.4	7.7	4.3

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										
2014	4,316.6	4,269.9	1,112.3	724.3	2,480.0	5,200.7	5,546.1	563.5	3,860.9	776.4
2015	4,290.7	4,272.9	1,041.1	761.5	2,488.2	5,307.6	5,640.6	595.9	3,948.4	763.3
2016	4,313.4	4,313.2	998.5	797.6	2,517.3	5,410.1	5,726.7	616.5	4,044.9	748.7
2016 Q2	4,312.7	4,293.2	1,043.0	777.5	2,492.1	5,348.3	5,683.5	604.1	3,986.3	757.9
Q3	4,302.5	4,291.6	1,011.5	787.9	2,503.1	5,379.3	5,701.1	608.5	4,018.2	752.6
Q4	4,313.4	4,313.2	998.5	797.6	2,517.3	5,410.1	5,726.7	616.5	4,044.9	748.7
2017 Q1	4,333.8	4,335.6	1,003.8	802.6	2,527.5	5,459.2	5,770.6	628.2	4,085.7	745.3
2016 Nov.	4,336.1	4,312.1	1,031.9	798.7	2,505.4	5,407.4	5,723.4	614.9	4,038.5	754.0
Dec.	4,313.4	4,313.2	998.5	797.6	2,517.3	5,410.1	5,726.7	616.5	4,044.9	748.7
2017 Jan.	4,329.3	4,322.3	1,013.9	799.6	2,515.7	5,422.9	5,743.6	620.8	4,052.2	749.9
Feb.	4,334.6	4,325.3	1,011.3	798.3	2,525.0	5,443.9	5,757.2	623.8	4,072.3	747.8
Mar.	4,333.8	4,335.6	1,003.8	802.6	2,527.5	5,459.2	5,770.6	628.2	4,085.7	745.3
Apr. [p]	4,337.0	4,343.2	997.8	804.2	2,535.0	5,467.8	5,778.0	629.5	4,096.4	741.9
Transactions										
2014	-60.6	-67.0	-14.1	2.6	-49.0	-14.9	5.5	-3.0	-3.2	-8.7
2015	-13.8	22.8	-64.2	31.9	18.5	98.3	76.1	21.9	80.0	-3.6
2016	78.4	93.5	-18.4	43.2	53.6	119.8	112.5	24.1	105.2	-9.4
2016 Q2	19.3	23.7	-4.2	8.5	14.9	14.5	29.5	1.6	13.5	-0.6
Q3	3.9	9.0	-23.7	13.4	14.2	33.8	27.8	5.1	32.5	-3.8
Q4	19.8	31.2	-9.8	8.4	21.2	35.3	30.4	9.3	30.6	-4.7
2017 Q1	29.1	33.9	8.6	7.0	13.5	51.6	46.2	10.6	40.2	0.8
2016 Nov.	16.0	8.4	5.9	7.6	2.5	18.9	10.8	2.6	15.6	0.7
Dec.	-14.9	9.4	-29.3	-1.8	16.1	9.2	10.0	2.4	10.4	-3.6
2017 Jan.	18.8	13.5	16.5	2.1	0.2	14.0	18.6	4.8	7.5	1.7
Feb.	3.8	1.6	-2.9	-1.1	7.8	20.0	12.5	1.9	18.6	-0.5
Mar.	6.5	18.8	-5.0	6.0	5.6	17.6	15.1	4.0	14.0	-0.4
Apr. [p]	8.2	11.9	-4.1	3.0	9.3	11.2	10.3	2.1	11.6	-2.6
Growth rates										
2014	-1.4	-1.5	-1.3	0.4	-1.9	-0.3	0.1	-0.5	-0.1	-1.1
2015	-0.3	0.5	-5.8	4.4	0.7	1.9	1.4	3.9	2.1	-0.5
2016	1.8	2.2	-1.8	5.7	2.2	2.3	2.0	4.1	2.7	-1.2
2016 Q2	1.3	1.8	-2.0	5.1	1.6	1.9	1.8	3.5	2.1	-0.4
Q3	1.4	1.9	-3.0	6.4	1.8	2.1	1.8	3.4	2.4	-0.9
Q4	1.8	2.2	-1.8	5.7	2.2	2.3	2.0	4.1	2.7	-1.2
2017 Q1	1.7	2.3	-2.8	4.8	2.6	2.5	2.4	4.4	2.9	-1.1
2016 Nov.	1.8	2.1	-1.9	6.6	1.9	2.1	1.9	3.7	2.5	-1.2
Dec.	1.8	2.2	-1.8	5.7	2.2	2.3	2.0	4.1	2.7	-1.2
2017 Jan.	1.7	2.2	-1.9	5.3	2.1	2.4	2.2	4.6	2.7	-0.9
Feb.	1.4	1.9	-2.3	3.8	2.3	2.4	2.3	4.2	2.8	-1.0
Mar.	1.7	2.3	-2.8	4.8	2.6	2.5	2.4	4.4	2.9	-1.1
Apr. [p]	1.6	2.4	-3.1	4.8	2.6	2.6	2.4	4.6	3.0	-1.2

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) 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									
2014	269.4	7,131.5	2,186.6	92.2	2,391.5	2,461.1	1,380.4	220.3	184.5	139.7
2015	284.8	6,996.9	2,119.7	79.8	2,254.0	2,543.5	1,343.8	263.4	205.9	135.6
2016	318.8	6,916.2	2,054.4	70.6	2,138.7	2,652.5	1,130.8	236.5	205.9	121.6
2016 Q2	319.3	7,006.8	2,094.1	74.6	2,175.8	2,662.3	1,292.4	295.3	238.0	144.0
Q3	310.1	6,961.3	2,068.5	72.4	2,125.4	2,695.0	1,196.7	281.7	209.2	129.1
Q4	318.8	6,916.2	2,054.4	70.6	2,138.7	2,652.5	1,130.8	236.5	205.9	121.6
2017 Q1	303.5	6,881.0	2,033.5	69.2	2,100.3	2,678.0	1,105.1	250.4	182.2	111.8
2016 Nov.	296.6	6,932.4	2,061.7	71.9	2,134.5	2,664.3	1,109.3	293.4	194.7	121.3
Dec.	318.8	6,916.2	2,054.4	70.6	2,138.7	2,652.5	1,130.8	236.5	205.9	121.6
2017 Jan.	302.8	6,865.5	2,037.8	69.8	2,117.1	2,640.9	1,113.6	220.5	176.5	106.3
Feb.	295.2	6,919.8	2,027.9	69.6	2,125.3	2,697.0	1,120.0	252.0	171.3	104.4
Mar.	303.5	6,881.0	2,033.5	69.2	2,100.3	2,678.0	1,105.1	250.4	182.2	111.8
Apr. [p]	335.2	6,848.6	2,022.0	69.3	2,083.5	2,673.8	1,063.2	262.4	173.8	103.7
	Transactions									
2014	-4.0	-171.0	-120.8	2.0	-160.1	107.9	238.7	-12.8	0.7	17.8
2015	9.2	-224.8	-106.2	-13.5	-212.8	107.6	-86.6	-18.4	21.4	-4.0
2016	31.0	-150.8	-73.1	-9.1	-121.2	52.7	-279.6	-72.4	12.8	-12.0
2016 Q2	4.2	-12.9	-22.3	-1.8	-15.9	27.1	-63.6	0.3	-9.2	-8.1
Q3	-9.2	-54.1	-25.8	-2.0	-41.2	14.9	-97.5	-14.3	-19.2	-13.7
Q4	6.6	-27.1	-21.5	-2.6	-18.1	15.1	-43.8	-92.3	-0.2	-7.5
2017 Q1	-16.1	-19.4	-14.7	-1.4	-31.2	28.0	-31.7	-9.1	-22.6	-9.1
2016 Nov.	-27.6	-11.5	-12.3	-0.5	-5.5	6.8	-13.2	-28.6	1.7	-12.4
Dec.	21.1	-15.9	-7.9	-1.3	-3.4	-3.3	22.2	-56.8	11.2	0.3
2017 Jan.	-16.4	-24.2	-10.3	-0.8	-4.9	-8.2	6.6	-55.2	-28.3	-14.6
Feb.	-8.2	12.4	-11.1	-0.2	-5.4	29.1	-34.5	41.5	-5.1	-2.0
Mar.	8.4	-7.6	6.6	-0.4	-20.8	7.1	-3.8	4.6	10.8	7.5
Apr. [p]	31.7	-15.5	-10.0	0.1	-5.2	-0.5	-30.0	12.7	-8.4	-8.2
	Growth rates									
2014	-1.6	-2.3	-5.1	2.2	-6.3	4.5	-	-	0.4	14.6
2015	3.6	-3.1	-4.8	-14.5	-8.7	4.3	-	-	11.6	-2.9
2016	10.9	-2.1	-3.4	-11.5	-5.4	2.0	-	-	6.3	-9.0
2016 Q2	20.1	-2.4	-2.9	-13.3	-7.0	2.8	-	-	3.6	-2.9
Q3	5.3	-2.5	-4.3	-12.2	-6.3	2.6	-	-	1.5	-8.2
Q4	10.9	-2.1	-3.4	-11.5	-5.4	2.0	-	-	6.3	-9.0
2017 Q1	-4.6	-1.6	-4.0	-10.1	-4.9	3.3	-	-	-21.2	-25.3
2016 Nov.	0.1	-2.1	-3.2	-10.7	-5.9	2.4	-	-	-4.9	-15.6
Dec.	10.9	-2.1	-3.4	-11.5	-5.4	2.0	-	-	6.3	-9.0
2017 Jan.	-1.4	-2.1	-3.5	-11.3	-4.8	1.7	-	-	-12.2	-23.8
Feb.	-1.7	-1.7	-4.4	-10.5	-3.9	2.6	-	-	-25.7	-25.7
Mar.	-4.6	-1.6	-4.0	-10.1	-4.9	3.3	-	-	-21.2	-25.3
Apr. [p]	5.5	-1.9	-4.4	-9.0	-4.8	2.8	-	-	-21.6	-24.8

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	Socual security funds	
	1	2	3	4	5	6
2013	-3.0	-2.6	-0.2	-0.1	-0.1	-0.2
2014	-2.6	-2.2	-0.2	0.0	-0.2	0.1
2015	-2.1	-1.9	-0.2	0.1	-0.1	0.3
2016	-1.5	-1.7	0.0	0.2	0.0	0.7
2016 Q1	-1.9	.	.	.	.	0.4
Q2	-1.8	.	.	.	.	0.5
Q3	-1.8	.	.	.	.	0.5
Q4	-1.5	.	.	.	.	0.7

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
2013	46.7	46.2	12.6	13.0	15.5	0.5	49.7	45.6	10.4	5.3	2.8	23.0	4.1
2014	46.7	46.3	12.5	13.1	15.5	0.5	49.3	45.3	10.3	5.3	2.7	23.0	4.0
2015	46.4	45.9	12.6	13.1	15.3	0.5	48.5	44.6	10.1	5.2	2.4	22.8	3.9
2016	46.3	45.8	12.6	13.0	15.4	0.5	47.8	44.3	10.0	5.2	2.2	22.8	3.5
2016 Q1	46.4	45.9	12.6	13.1	15.3	0.5	48.3	44.5	10.1	5.2	2.3	22.8	3.9
Q2	46.3	45.8	12.5	13.1	15.4	0.5	48.1	44.3	10.0	5.2	2.3	22.8	3.8
Q3	46.3	45.8	12.6	13.1	15.4	0.5	48.1	44.3	10.0	5.2	2.2	22.8	3.8
Q4	46.3	45.8	12.6	13.0	15.4	0.5	47.8	44.3	10.0	5.2	2.2	22.9	3.5

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
2013	91.4	2.6	17.5	71.2	46.4	26.3	45.0	10.4	81.0	19.4	32.1	39.9	89.3	2.1
2014	92.0	2.7	17.1	72.1	45.2	26.0	46.8	10.0	82.0	18.8	31.9	41.2	89.9	2.1
2015	90.3	2.8	16.2	71.3	45.5	27.5	44.7	9.3	81.0	17.7	31.1	41.5	88.2	2.1
2016	89.2	2.7	15.5	71.0	47.8	30.3	41.5	9.0	80.3	17.3	29.5	42.5	87.2	2.1
2016 Q1	91.3	2.7	16.2	72.4	.	.	.	.	.	.	.	.	.	.
Q2	91.2	2.7	16.0	72.5	.	.	.	.	.	.	.	.	.	.
Q3	90.1	2.7	15.6	71.7	.	.	.	.	.	.	.	.	.	.
Q4	89.3	2.7	15.5	71.1	.	.	.	.	.	.	.	.	.	.

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
2013	1.9	0.2	-0.2	-0.8	-0.5	-0.4	-0.2	0.4	0.2	0.4	1.9	2.6
2014	0.6	-0.1	-0.1	-0.3	0.2	-0.2	-0.3	0.0	0.0	0.2	0.8	2.5
2015	-1.7	-0.3	-0.9	-0.5	0.2	-0.2	-0.3	-0.1	-0.1	-0.3	-0.5	1.3
2016	-1.0	-0.7	-0.3	0.2	0.2	-0.1	0.0	0.1	-0.3	-0.2	-0.1	1.5
2016 Q1	-1.5	-0.4	-0.6	-0.2	0.3	-0.2	-0.3	0.0	0.0	-0.4	-0.5	1.3
Q2	-0.9	-0.5	0.1	0.4	0.8	-0.2	-0.2	0.0	-0.1	-0.2	-0.5	2.0
Q3	-1.4	-0.5	-0.5	-0.2	0.2	-0.1	-0.3	0.0	-0.2	-0.1	-0.4	1.5
Q4	-1.1	-0.7	-0.3	0.3	0.2	-0.1	0.0	0.1	-0.3	-0.3	-0.2	1.5

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
2014	15.9	13.8	5.1	2.0	0.5	6.4	3.1	1.6	0.4	3.5	2.8	0.8	1.6
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	14.2	12.5	4.6	1.7	0.4	6.7	2.6	1.2	-0.1	3.0	2.9	0.2	1.2
2016 Q1	15.1	13.2	4.7	1.8	0.5	6.6	2.7	1.4	0.0	3.2	3.0	0.3	1.1
Q2	14.9	13.1	4.8	1.8	0.5	6.7	2.7	1.3	-0.1	3.1	2.9	0.3	1.1
Q3	14.5	12.7	4.0	1.8	0.4	6.8	2.6	1.3	-0.1	3.1	2.9	0.2	1.2
Q4	14.2	12.5	4.6	1.7	0.4	6.9	2.6	1.2	-0.1	3.0	2.9	0.2	1.2
2016 Nov.	14.5	12.8	4.3	1.7	0.4	6.9	2.6	1.2	-0.1	3.0	2.9	0.2	1.3
Dec.	14.2	12.5	4.6	1.7	0.4	6.9	2.6	1.2	-0.1	3.0	2.9	0.2	1.2
2017 Jan.	14.4	12.7	4.9	1.7	0.4	6.9	2.6	1.2	-0.2	3.0	2.9	0.2	1.2
Feb.	14.1	12.4	4.2	1.7	0.4	7.0	2.6	1.2	-0.2	3.0	2.9	0.2	1.3
Mar.	14.4	12.7	4.4	1.7	0.4	6.9	2.5	1.2	-0.2	3.0	2.9	0.2	1.1
Apr.	14.3	12.6	4.3	1.7	0.4	7.0	2.5	1.2	-0.2	3.0	2.9	0.2	1.2

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 (+)								
2013	-3.1	-0.2	-0.2	-5.7	-13.1	-7.0	-4.0	-2.9	-5.1
2014	-3.1	0.3	0.7	-3.7	-3.7	-6.0	-3.9	-3.0	-8.8
2015	-2.5	0.7	0.1	-2.0	-5.9	-5.1	-3.6	-2.7	-1.2
2016	-2.6	0.8	0.3	-0.6	0.7	-4.5	-3.4	-2.4	0.4
2016 Q1	-2.6	0.8	0.7	-1.6	-4.8	-5.1	-3.5	-2.6	-0.3
Q2	-2.6	0.8	0.8	-1.6	-3.7	-5.3	-3.3	-2.4	-1.3
Q3	-3.0	0.6	0.5	-1.8	-1.8	-4.8	-3.4	-2.4	-1.0
Q4	-2.6	0.8	0.3	-0.6	0.7	-4.5	-3.4	-2.4	0.4
	Government debt								
2013	105.6	77.5	10.2	119.5	177.4	95.5	92.3	129.0	102.2
2014	106.7	74.9	10.7	105.3	179.7	100.4	94.9	131.8	107.1
2015	106.0	71.2	10.1	78.7	177.4	99.8	95.6	132.1	107.5
2016	105.9	68.3	9.5	75.4	179.0	99.4	96.0	132.6	107.8
2016 Q1	109.2	70.9	9.9	80.1	176.4	101.2	97.6	134.8	108.4
Q2	109.7	70.2	9.7	77.7	179.7	101.1	98.4	135.4	107.5
Q3	108.7	69.5	9.6	77.1	176.3	100.4	97.5	132.7	110.6
Q4	105.9	68.3	9.5	75.4	179.0	99.4	96.6	132.6	107.8

	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Austria	Portugal	Slovenia	Slovakia	Finland
	10	11	12	13	14	15	16	17	18	19
	Government deficit (-)/surplus (+)									
2013	-1.0	-2.6	1.0	-2.6	-2.4	-1.4	-4.8	-15.1	-2.7	-2.6
2014	-1.6	-0.7	1.4	-2.0	-2.3	-2.7	-7.2	-5.4	-2.7	-3.2
2015	-1.3	-0.2	1.4	-1.3	-2.1	-1.1	-4.4	-2.9	-2.7	-2.7
2016	0.0	0.3	1.6	1.0	0.4	-1.6	-2.0	-1.8	-1.7	-1.9
2016 Q1	-0.7	-0.1	1.3	-0.3	-1.9	-1.0	-3.7	-2.7	-2.5	-2.4
Q2	-0.4	0.4	1.1	0.4	-1.0	-0.9	-3.5	-1.8	-2.3	-2.4
Q3	0.2	0.2	1.1	0.8	-0.4	-0.6	-3.7	-1.7	-2.0	-2.2
Q4	0.0	0.3	1.6	1.0	0.4	-1.6	-2.0	-1.8	-1.7	-1.9
	Government debt									
2013	39.0	38.7	23.4	68.7	67.7	81.3	129.0	71.0	54.7	56.5
2014	40.9	40.5	22.4	64.3	67.9	84.4	130.6	80.9	53.6	60.2
2015	36.5	42.7	21.6	60.6	65.2	85.5	129.0	83.1	52.5	63.7
2016	40.1	40.2	20.0	58.3	62.3	84.6	130.4	79.7	51.9	63.6
2016 Q1	36.3	40.0	21.9	61.8	64.9	86.5	128.9	83.6	51.8	64.3
Q2	38.9	40.1	21.4	61.0	63.8	86.2	131.6	82.5	52.9	61.9
Q3	37.9	41.3	20.9	59.7	62.0	83.7	133.1	82.8	52.7	61.8
Q4	40.1	40.2	20.0	58.3	62.3	84.6	130.4	79.7	51.9	63.6

Source: Eurostat.

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This Bulletin was produced under the responsibility of the Executive Board of the ECB. Translations are prepared and published by the national central banks.

The cut-off date for the statistics included in this issue was 7 June 2017, with the exception of GDP and its main components, for which the cut-off date was 8 June 2017.

ISSN	2363-3417 (html)	DOI	10.2866/92518 (html)
ISSN	2363-3417 (pdf)	DOI	10.2866/92518 (pdf)
EU catalogue No	QB-BP-17-004-EN-Q (html)		
EU catalogue No	QB-BP-17-004-EN-N (pdf)		