EUROPEAN CENTRAL BANK

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Update on economic and monetary developments

Summary

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. Incoming data since the Governing Council's meeting in early March confirm that the cyclical recovery of the euro area economy is becoming increasingly solid and that downside risks have further diminished.[1] At the same time, underlying inflation pressures continue to remain subdued and have yet to show a convincing upward trend. Moreover, the ongoing volatility in headline inflation underlines the need to look through transient developments in HICP inflation, which have no implication for the medium-term outlook for price stability.

Available indicators point to sustained global growth at the beginning of 2017, while the recovery in international trade has continued. The global recovery is broadening, with the improvement in growth being widespread across countries. International financial conditions have remained overall supportive, despite significant policy uncertainty. Global headline inflation has increased further, mainly driven by energy prices. However, oil prices have recently undergone some volatility.

Euro area financing conditions remain very favourable. Comparing developments between the Governing Council meetings of 9 March and 27 April, bond, equity and foreign exchange markets overall show only small movements.

Incoming data, notably survey results, suggest that the ongoing economic expansion will continue to firm and broaden. The pass-through of the monetary policy measures is supporting domestic demand and facilitates the ongoing deleveraging process. 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. Moreover, the signs of a stronger global recovery and increasing global trade suggest that foreign demand should increasingly add to the overall resilience of the economic expansion in the euro area. However, economic growth continues 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. The risks surrounding the euro area growth outlook, while moving towards a more balanced configuration, are still tilted to the downside and relate predominantly to global factors.

[1] Taking into account information available at the time of the Governing Council meeting of 27 April 2017.

Inflation has been recovering from the very low levels seen in 2016, largely owing to higher energy price increases. After reaching 2.0% in February, euro area annual HICP inflation declined to 1.5% in March 2017. Measures of underlying inflation, however, have remained low and are expected to show only a gradually rising trend over the medium term, supported by the monetary policy measures, the expected continuing economic recovery and the corresponding gradual absorption of slack.

Broad money growth remained robust, while the recovery in loan growth to the private sector observed since the beginning of 2014 is proceeding. The euro area bank lending survey for the first quarter of 2017 indicates that net loan demand has increased and bank lending conditions have eased further across all loan categories. The pass-through of the monetary policy measures put in place since June 2014 thus continues to significantly support borrowing conditions for firms and households and credit flows across the euro area. Moreover, financing costs for euro area non-financial corporations are estimated to have remained favourable in the early months of 2017.

At its meeting on 27 April 2017, based on the regular economic and monetary analyses, the Governing Council decided to keep the key ECB interest rates unchanged. The Governing Council continues to expect the key ECB interest rates to remain at present or lower levels for an extended period of time, and well past the horizon of the net asset purchases. Regarding non-standard monetary policy measures, the Governing Council confirmed that the net asset purchases, at the new 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 asset purchase programme.

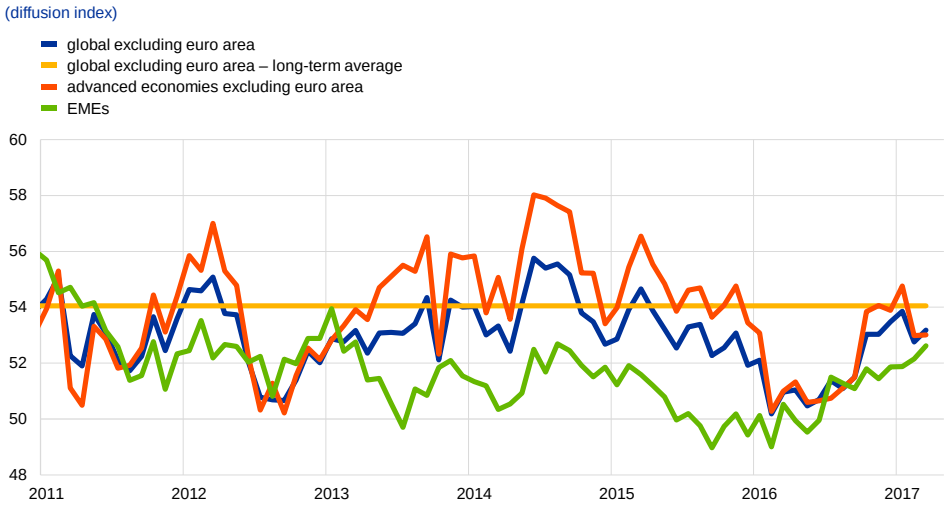
Looking ahead, the Governing Council confirmed that a very substantial degree of monetary accommodation is needed for euro area inflation pressures to build up and support headline inflation in the medium term. If the outlook becomes less favourable, or if financial conditions become inconsistent with further progress towards a sustained adjustment in the path of inflation, the Governing Council stands ready to increase the asset purchase programme in terms of size and/or duration.

1 External environment

Surveys point to sustained global growth in the first quarter of 2017. The global composite output Purchasing Managers' Index (PMI) excluding the euro area increased in March (see Chart 1), driven by a rise in the services index while the manufacturing PMI remained broadly unchanged at three-year highs. In quarterly terms, the PMI remained at about the same level in the first quarter of 2017 relative to the previous quarter, pointing to ongoing robust growth. Quarterly PMIs weakened in the United Kingdom and to a lesser extent in the United States, but picked up in Japan. Among emerging market economies (EMEs), quarterly PMIs decreased in China, but improved in Russia, India and Brazil – albeit remaining below the expansionary level.

Chart 1

Global composite output PMI



Sources: Markit and ECB calculations.
Note: The latest observations are for March 2017.

The recovery is broadening, with the improvement in growth being widespread across countries. Indeed, the dispersion of quarterly growth rates across countries has narrowed considerably in recent quarters. In particular, activity in commodity exporters has stabilised following the rebound in commodity prices, while temporary downturns caused by domestic factors in countries such as Turkey are also bottoming out.

Global financial conditions remain broadly supportive. Equity markets have moderated recently as investors had some concerns about the ability of the new US administration to follow through on policy pronouncements. Yet despite significant policy uncertainty, financial markets have been generally resilient, with risk aversion low. The Federal Reserve System increased its official interest rates at its March meeting. While other major central banks are expected to maintain an accommodative stance, markets have also been buoyed by expectations that monetary tightening in the United States will be gradual. In China, financial conditions have tightened for banks and bond yields have increased, but benchmark

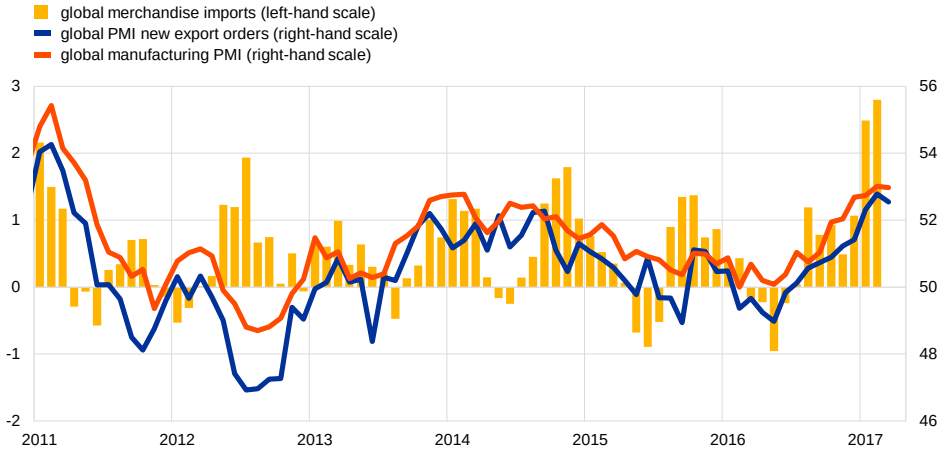
bank lending rates have remained unchanged. Financial conditions in most other EMEs have improved with financial markets rebounding and, following some weeks of outflows, capital has flowed back towards EMEs.

The recovery in global trade continued at the start of the year. Growth in global goods imports increased to 2.8% (in three-month-on-three-month terms) in February, the strongest figure in more than ten years (see Chart 2). The rise in momentum was mainly driven by EMEs, with particularly strong improvements in central and eastern Europe and Latin America. Leading indicators also confirm the positive trend. The global PMI for new export orders increased to 52.5 in the first quarter of 2017, pointing to a sustained recovery in global trade growth.

Chart 2

Global trade and surveys

(in three-month-on-three-month percentage (left-hand scale); diffusion index (right-hand scale))



Sources: Markit, CPB Netherlands Bureau for Economic Policy Analysis and ECB staff calculation.
Note: The latest observations are for February 2017 for global merchandise imports and March 2017 for PMIs.

Global inflation increased further in February, mainly driven by energy prices. Annual consumer price inflation in the countries of the Organisation for Economic Co-operation and Development (OECD) reached 2.5% in February, a level not seen in almost five years. Excluding food and energy, OECD annual inflation remained unchanged at 1.9% compared with figures for January. Slowly diminishing spare capacity at the global level is expected to give some support to underlying inflation looking forward, while the current oil futures curve anticipates very stable oil prices, pointing to a very limited contribution from energy prices to inflation.

Since late last year when members of the Organization of the Petroleum Exporting Countries (OPEC) and 11 non-OPEC producer countries agreed to cut oil production, Brent crude oil prices have fluctuated in the range of USD 49 to USD 56 per barrel. While global oil production dropped in January as expected, in February oil supply in both OPEC and non-OPEC countries increased, raising concerns about whether the supply curtailment would be complied with. At the same time rising US crude oil inventories and shale oil supply further weighed negatively on oil prices, sending them back to USD 50 per barrel where they had stood at the end of November 2016. Since the beginning of April, prices have

reverted to a mild positive trend owing to a new decline in US inventories and outages in Libya's largest oilfield due to renewed geopolitical tensions. Expectations that the OPEC cut would be extended for the second half of 2017 have also recently been priced in. Non-oil commodity prices have decreased by around 5%, in US dollar terms, since early March. This has been driven largely by a substantial decline in the price of iron ore, due to high stocks at Chinese ports and expectations of a moderation in Chinese steel demand and, to a lesser extent, due to a decline in food prices. Other non-ferrous metal prices remained broadly stable.

The outlook for economic activity in the United States remains broadly robust. Real GDP expanded at an annualised rate of 2.1% in the fourth quarter of 2016, supported primarily by consumer spending and private investment. Survey and hard data have diverged at the start of 2017, with consumer and business sentiment continuing to be robust, while industrial production, core capital goods orders and consumer spending are softening. However, some of the factors holding back consumption are temporary, including exceptionally warm weather weighing on energy consumption, and delays in tax refunds. At the same time, labour market conditions continued tightening in March, with the unemployment rate reaching 4.5% (below the Federal Open Market Committee's estimate of full employment) and annual growth in average hourly earnings at 2.7%. In March annual headline consumer price index (CPI) inflation in the United States decreased to 2.4%, mostly stemming from a decline in the energy component. The main components of core inflation also moderated, leading to a fall in CPI excluding food and energy to 2.0%.

Economic growth in Japan remains modest. Real GDP increased by 0.3% quarter on quarter in the fourth quarter of 2016, with both domestic demand growth and net trade remaining subdued. After some weakness in January, industrial production and real exports have rebounded and remain on average above last year's levels for the same period. Moreover data on private consumption point to some tentative signs of a recovery, supported by developments in the labour market. However, the tightening in the labour market, with the unemployment rate at its lowest level since 1994, has not led to an acceleration in wage growth. Headline CPI inflation increased to 0.4% in January year on year. At the same time, annual growth in CPI excluding fresh food and energy – the Bank of Japan's preferred measure of core inflation – also strengthened somewhat, to 0.2%.

Following robust growth in the UK economy last year, recent indicators point to a softer start into 2017. In the final quarter of 2016, real GDP increased by 0.7% quarter on quarter. However, recent indicators overall suggest that the pace of economic expansion softened at the start of this year. In particular, there are signs that rising inflation is curtailing real incomes and private consumption. The pick-up in inflation over recent months has been driven largely by energy prices and the depreciation of the pound sterling since the UK referendum on EU membership. In March 2017 annual CPI inflation stood at 2.3%. On 29 March 2017 the UK government gave formal notice of its intention to withdraw from the European Union, paving the way for EU-UK negotiations in accordance with Article 50 of the Treaties.

Economic growth in the Chinese economy stabilised. Real GDP grew at 6.9%, in year-on-year terms, in the first quarter of 2017, slightly higher than in the previous

quarter. Growth was mainly driven by consumption, while the contribution of gross fixed capital formation was the lowest since early 2015. However, overall momentum in the first quarter was weaker than in the last quarter of 2016. It was also weaker than what some available indicators suggested, in particular for investment and construction, which could reflect a residual seasonality affecting the estimate for the first quarter. Annual CPI inflation fell to 0.8% in February, from 2.5% in January, as food and tourism services prices fell after the Chinese New Year holiday. Inflation excluding food and energy decreased to 1.8% from 2.2%. Meanwhile, annual producer price inflation rose to 7.8%, which is attributed to rising ferrous metal and energy prices. Reductions in overcapacity in heavy industry have pushed up raw material prices but this is likely to be temporary.

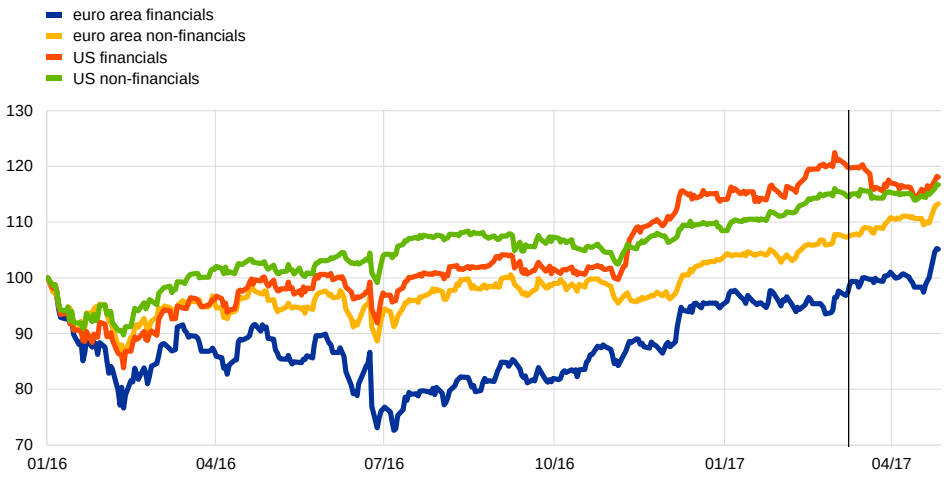
2 Financial developments

Overall, euro area government bond yields have slightly declined since early March. The slight decline during the period under review (9 March to 26 April 2017) has taken place in the context of heightened political uncertainty surrounding the French presidential elections. As a result, a phase of declining yields between late March and the day before the first-round results of the French elections were known was partially offset by rising yields in the aftermath of the vote. Overall, the euro area ten-year overnight index swap (OIS) yield declined by 5 basis points while sovereign bond yields decreased on average by around 15 basis points. Across countries, the declines ranged from a few basis points to around 70 points, while some marginal increases were observed in Italy and the Netherlands. Spreads vis-à-vis the rate on German ten-year bonds overall remained unchanged or decreased slightly in most countries, with the exception of Greece and Portugal (where the declines reached around 70 basis points) and Italy and the Netherlands (where spreads rose marginally).

Chart 3

Selected euro area and US equity price indices

(1 January 2016 = 100)



Source: Thomson Reuters.
Notes: Daily data. The black vertical line refers to the start of the review period (9 March 2017). The latest observation is for 26 April 2017.

Euro area equity prices have increased since early March. At the end of the period under review the equity prices of euro area non-financial corporations (NFCs) were around 5% higher than at the beginning, while prices rose by almost 7% for financial corporations. Overall, the recent positive developments in the euro area stock market have led equity prices of banks to now stand around 70% higher than the lows recorded in the aftermath of the United Kingdom's referendum on EU membership in June 2016 (see Chart 3). As has been the case for bonds, political uncertainty has also affected developments in the euro area equity market: euro area equities mostly moved sideways ahead of the outcome of the French presidential elections only to then rise significantly. Since early March equity prices of NFCs in the United States and the United Kingdom have risen significantly less

than in the euro area, while they declined marginally in Japan. The equity prices of financial corporations underperformed relative to NFCs in all three economic areas. Market expectations of equity price volatility increased significantly in the euro area to around 23% ahead of the French elections, but reverted to the levels prevailing in early March, i.e. around 14%, in the aftermath. In the United States, by contrast, market-based expectations of equity price volatility remained broadly stable from early March.

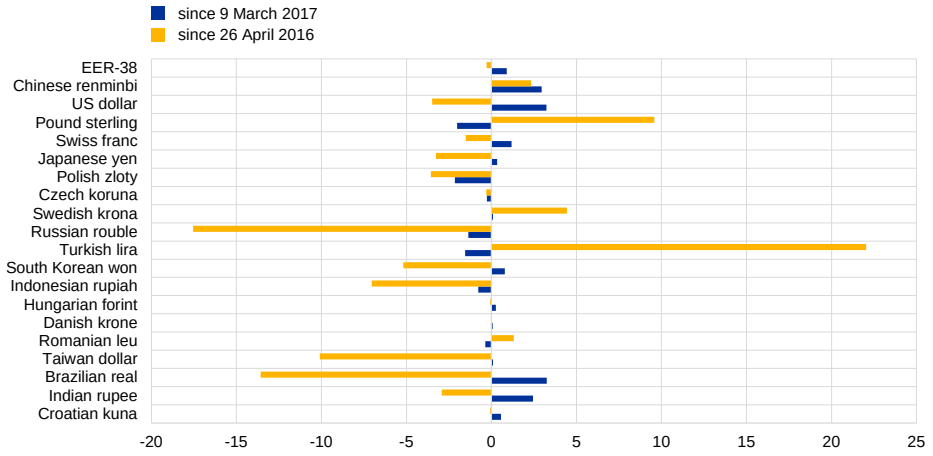
Spreads on bonds issued by NFCs declined marginally during the period under review. On 26 April, investment grade NFC bond spreads (on average for rating classes AAA, AA, A and BBB) were 4 basis points lower than in early March and still around 25 basis points lower than in March 2016, when the Governing Council announced the launch of the corporate sector purchase programme (CSPP). Spreads on non-investment grade NFC and financial sector debt (which is ineligible for purchase under the CSPP) also declined over the same period, by 10 and 4 basis points respectively.

In foreign exchange markets, the euro recorded a small depreciation in trade-weighted terms. In bilateral terms, from 9 March, the euro appreciated by 3.2% against the US dollar and by 2.9% against the Chinese renminbi. Such developments were more than offset by a weakening of the euro vis-à-vis the currencies of other principal trading partners of the euro area. In particular, the euro depreciated against the pound sterling (by 2%) and against the currencies of most other non-euro area EU Member States. In the case of the Czech koruna, the euro weakened against it slightly (by 0.3%) following the discontinuation of the koruna's exchange rate floor (see Chart 4).

Chart 4

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

(percentages)



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.

The euro overnight index average (EONIA) remained stable during the review period, at around -35 basis points. Excess liquidity increased by around €243 billion, to approximately €1,608 billion. The increase was primarily attributable to the

final targeted longer-term refinancing operation in the second series (TLTRO-II), which resulted in a net injection of liquidity of around €200 billion (see Box 5 in this issue of the Economic Bulletin for more details on TLTROs). In addition, the purchases under the expanded asset purchase programme (APP) continued to contribute to rising excess liquidity.

The EONIA forward curve has shifted downwards by around 10 basis points on average across maturities. An initial upward movement of the curve, which lasted until around mid-March, was more than reversed in the remainder of the review period. Overall, the EONIA forward curve for maturities above eight years moved downwards by around 15 basis points, while the three to seven-year segment declined by some 10 basis points. Forward rates declined only more marginally for shorter maturities. The curve remains below zero for maturities prior to early 2020.

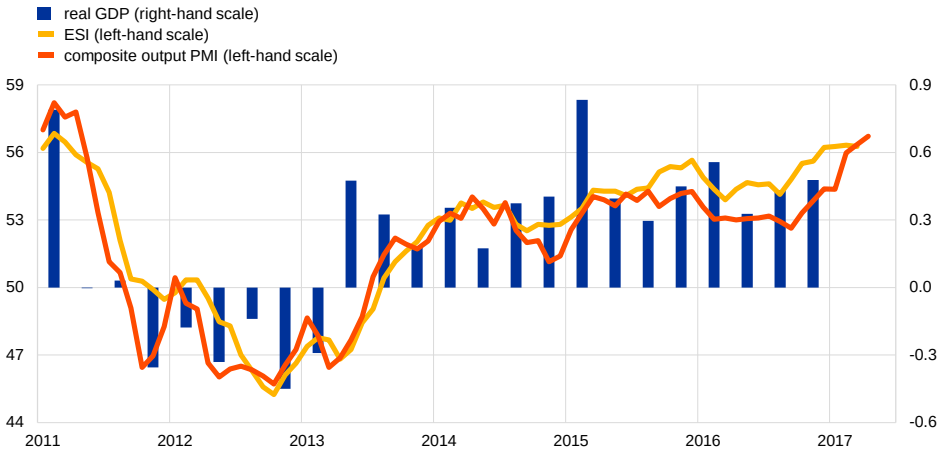
3 Economic activity

The domestic demand-driven economic expansion in the euro area is firming and broadening. Real GDP increased by 0.5%, quarter on quarter, in the fourth quarter of 2016 (see Chart 5), on the back of positive contributions from domestic demand and, to a lesser extent, changes in inventories. At the same time, net trade provided a strong negative contribution to GDP growth, as import growth significantly outpaced the rise in exports. The latest economic indicators, both hard data and survey results, remain buoyant and point to ongoing growth in the first half of 2017, at around the same rate as that observed in the fourth quarter of last year.

Chart 5

Euro area real GDP, the Economic Sentiment Indicator (ESI) and the composite output Purchasing Managers' Index (PMI)

(quarter-on-quarter percentage growth; index; diffusion index)



Sources: Eurostat, European Commission, Markit and ECB.
Notes: The ESI is normalised with the mean and standard deviation of the PMI. The latest observations are for the fourth quarter of 2016 for real GDP, March 2017 for the ESI and April 2017 for the PMI.

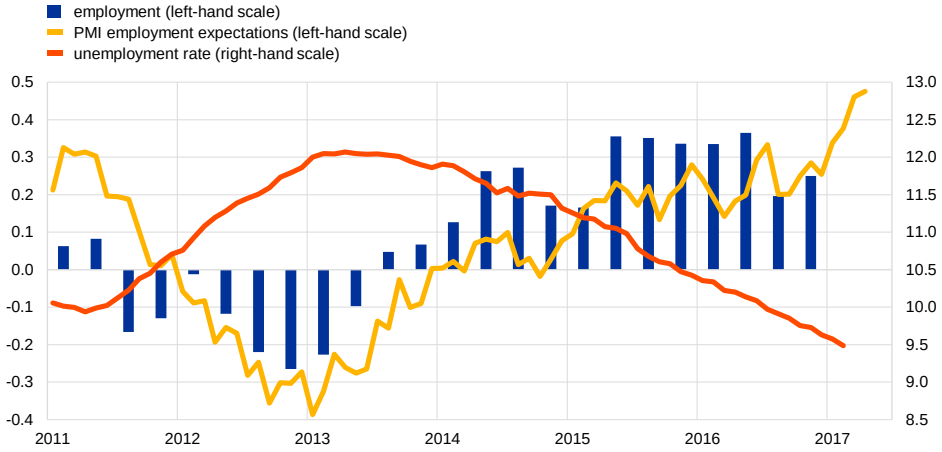
Consumer spending rose again in the fourth quarter of 2016, thus continuing to be an important driver of the ongoing recovery. Quarterly private consumption growth increased further to 0.5%. This improvement in growth took place despite a rise in the euro price of oil of almost 15% between the third and fourth quarter of last year. On an annual basis, consumption rose by 1.9% in the fourth quarter, after 1.8% in the third quarter. This slight increase was in contrast to a sharp slowdown in the growth of households' real disposable income, to 1.1%, year on year, from 1.6% in the third quarter. This decline, in turn, mirrored the increase in annual inflation, as measured by the private consumption deflator, between the third and fourth quarter. It should be borne in mind, however, that income growth, despite the latest decline, remains relatively high by historical standards. Indeed, consumer spending during the ongoing recovery has been benefiting from rising real labour income for households, which has primarily reflected rising employment and lower oil prices. The slightly higher consumption growth, alongside falling real income growth, between the third and fourth quarter resulted in a fall in the household saving rate.

Euro area labour markets continue to improve, thus supporting income and spending. Employment rose further, by 0.3%, quarter on quarter, in the fourth quarter of 2016, resulting in an annual increase of 1.2%. As a result, employment currently stands 3.4% above the last trough in the second quarter of 2013. However, compared with the pre-crisis peak in the first quarter of 2008, employment is still down by almost half a percent. The unemployment rate in the euro area edged down to 9.5% in February 2017, i.e. 2.6 percentage points below its post-crisis peak in April 2013 (see Chart 6). This decline was broad-based across age and gender groups (see also Box 2). However, the degree of underutilisation of labour remains high and considerably above that suggested by the unemployment rate (see Box 3). Survey information points to continued improvements in labour markets in the period ahead.

Chart 6

Euro area employment, PMI employment expectations and unemployment

(quarter-on-quarter percentage changes; diffusion index; percentage of labour force)



Sources: Eurostat, Markit and ECB calculations.
Notes: The PMI is expressed as a deviation from 50 divided by 10. The latest observations are for the fourth quarter of 2016 for employment, April 2017 for the PMI and February 2017 for unemployment.

Consumption growth is expected to remain robust. After having improved in the fourth quarter of 2016, consumer confidence increased again in the first quarter. As a result, consumer sentiment stands well above its long-term average and close to its pre-crisis peak level in 2007. Moreover, data on retail trade (up to February 2017) and new passenger car registrations (for the full first quarter) are in line with positive growth in consumer spending in the first quarter of 2017, at a similar pace to that observed in the fourth quarter. Moreover, further employment growth, as suggested by the latest survey indicators, should also continue to support aggregate income and consumer spending. Finally, households' net worth relative to disposable income continues to rise, owing largely to valuation gains on real estate holdings. This development should add support to overall consumption growth.

Investment growth rebounded strongly in the fourth quarter, after the weak outcome in the third quarter. Total investment rose by 3.3%, quarter on quarter, in the fourth quarter of 2016, reflecting a strong rise in non-construction investment. The 6.4% rise in non-construction investment was due to a sharp increase in

investment in intellectual property products, in turn reflecting the transaction of assets by a small number of large economic operators in Ireland. By contrast, investment in machinery and equipment contracted slightly in the fourth quarter. Meanwhile, the small increase in construction investment, of 0.1%, quarter on quarter, reflected a rise in investment in homes, which was partly offset by a decline in investment in other buildings and structures.

Incoming information suggests that both business investment and construction investment continued to rise in the first quarter of 2017. Continued positive growth in business investment is indicated by the average level of industrial production of capital goods in January and February, which was 0.2% up on that in the fourth quarter of 2016. Moreover, confidence in the capital goods sector was, on average, higher in the first quarter than in the previous quarter, and the assessment of order books in the capital goods sector improved both overall and in terms of orders from abroad, alongside the observed gradual improvement of the external environment. With regard to construction investment, monthly construction production data point to positive growth in the first quarter of 2017. Furthermore, survey indicators on the demand situation and the assessment of order books in the sector, as well as building permits, are still in line with positive underlying dynamics in the short term.

The recovery in investment is expected to continue in the medium term. Business investment is expected to be supported by domestic and external demand and favourable financing conditions, in the context of the accommodative monetary policy. Improving corporate profits should also support investment. As regards construction investment, factors such as households' rising disposable income and improving lending conditions should underpin demand in the sector. Downside risks to the outlook for business investment relate to remaining deleveraging needs in some countries.

Monthly trade data point to a continued rise in euro area exports in the near term. Total euro area exports rose by 1.8% in the fourth quarter, mainly on account of a rebound in goods exports, supported by a weaker effective exchange rate of the euro and a gradual rebound in global trade. Monthly trade in goods outcomes for January and February suggest that extra-euro area exports continued to firm in the first quarter of 2017. The export growth momentum (in three-month-on-three-month percentage changes) seems to be driven by demand mainly from Asia (including China) and improvements in Russia as well as the United States.

Euro area exports are expected to rebound as global trade continues to firm. Survey indicators signal improvements in foreign demand, and new export orders have risen. In addition, the effective exchange rate of the euro depreciated in the first four months of 2017 and could spur competiveness gains for euro area exporters. However, any emergence of protectionist tendencies around the world could pose downside risks to the outlook for foreign demand and hence euro area exports in the longer term.

Overall, the latest economic indicators are, on balance, consistent with ongoing real GDP growth in the first and second quarters of 2017, at around

the same rate as in the fourth quarter of last year. Industrial production (excluding construction) displayed a small decline in February 2017 following a rise of the same magnitude in the previous month. As a result, average production over these two months stood broadly at the same level as in the final quarter of 2016, when production rose by 0.9% on a quarterly basis. More timely survey data are also in line with continued positive growth dynamics in the near term. The composite output Purchasing Managers' Index (PMI) averaged 55.6 in the first quarter of 2017, compared with 53.8 in the fourth quarter, before rising to 56.7 in April from 56.4 in March (see Chart 5). At the same time, the European Commission's Economic Sentiment Indicator (ESI) rose to 107.9 in the first quarter from 106.9 in the fourth quarter. Consequently, both the ESI and the PMI, which remain above their respective long-term averages, are approaching their recent peaks at the beginning of 2011.

Looking ahead, the ongoing economic expansion is expected to continue to firm and broaden. The pass-through of the monetary policy measures is supporting domestic demand and facilitates the ongoing deleveraging process. 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. Moreover, the signs of a stronger global recovery and increasing global trade suggest that foreign demand should increasingly add to the overall resilience of the economic expansion in the euro area. However, economic growth continues 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. The risks surrounding the euro area growth outlook, while moving towards a more balanced configuration, are still tilted to the downside and relate predominantly to global factors. The results of the latest round of the ECB's Survey of Professional Forecasters, conducted in early April, show that private sector GDP growth forecasts were revised upwards for 2017 and 2018 in comparison with the previous round conducted in early January.

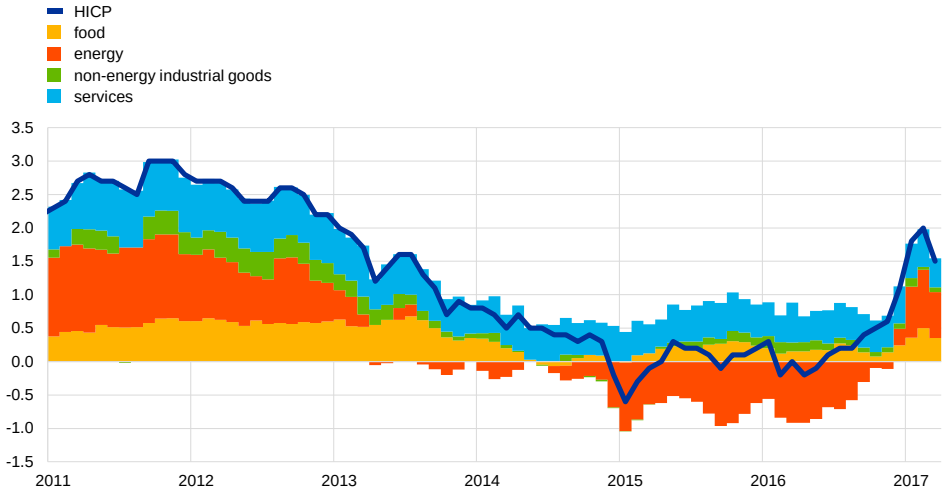
4 Prices and costs

Headline inflation fell back in March. After reaching 2.0% in February, headline inflation declined to 1.5% in March (see Chart 7). The decline was driven in particular by lower inflation rates for the volatile components energy and unprocessed food, but also by lower HICP inflation excluding food and energy.

Chart 7

Contributions of components to euro area headline HICP inflation

(annual percentage changes; percentage point contributions)



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

Measures of underlying inflation have remained subdued. The annual rate of HICP inflation excluding food and energy declined to 0.7% in March 2017 from 0.9% in February – the lowest level over the last two years. The decline resulted to a large extent from the deceleration in the very volatile travel-related components of services. This most likely reflected mainly price effects linked to the timing of the Easter holidays (with Easter being in April this year but in March last year), which are thus likely to be of a more temporary nature. HICP inflation excluding food and energy has remained well below its long-term average of 1.4%. Furthermore, most alternative measures also do not indicate a pick-up in underlying inflationary pressures. This may reflect in part the lagged downward indirect effects of past low oil prices but also, more fundamentally, continued weak domestic cost pressures.

Some pipeline pressures have built up at the early stages of the production and pricing chain. At the early stages of the pricing chain, above-average global producer price inflation (excluding oil) and strong growth in import prices for intermediate goods point to a build-up of pipeline price pressures. Intermediate goods are also the main driver of recent increases in producer price inflation for total industry (excluding construction and energy) in the euro area, which rose to 2.1% in February 2017 from 1.5% in January. Further along the pricing chain some upward pressure is visible in the annual inflation for import prices of non-food consumer goods, which continued their marked pick-up since November 2016 and rose further from -0.1% in January to 0.6% in February. However, domestic producer price

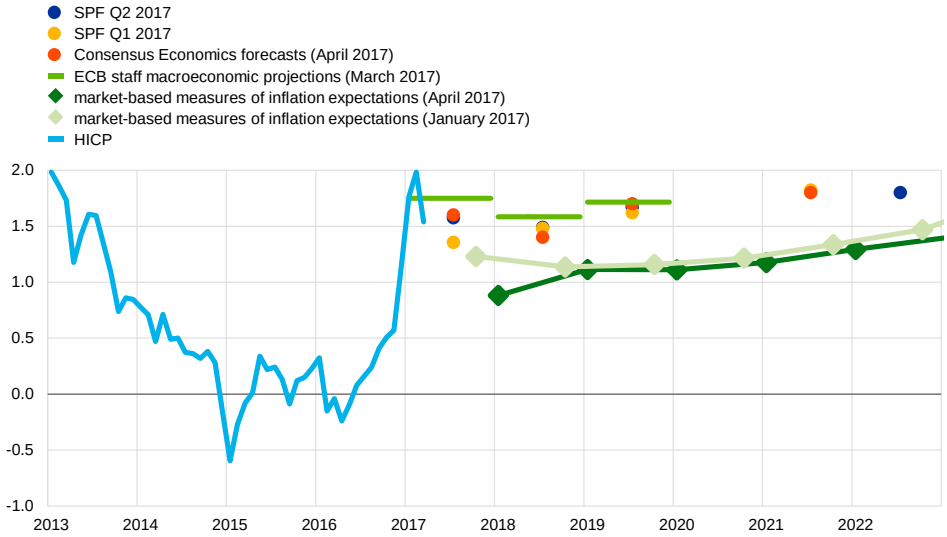
inflation for non-food consumer goods remained largely flat at a subdued level, recording 0.2% in February, and so has not as yet provided support for non-energy industrial goods inflation (see also the discussion in Box 4 entitled "What can recent developments in producer prices tell us about pipeline pressures?").

Wage growth in the euro area has been picking up slightly, but remains low. Annual growth in compensation per employee rose from 1.3% in the third quarter of 2016 to 1.5% in the fourth quarter, but continues to stand well below its long-term average (since 1999) of 2.1%. Factors that may have been weighing on wage growth include still significant slack in the labour market, weak productivity growth and the ongoing impact of labour market reforms implemented in some countries during the crisis. Additionally, the low inflation environment over the last years may be still contributing to lower wage growth through backward-looking formal and informal indexation mechanisms.

Chart 8

Market and survey-based measures of inflation expectations

(annual percentage changes)



Sources: Thomson Reuters and ECB calculations.
Note: The market-based measures of inflation expectations are derived from HICPx (the euro area HICP excluding tobacco) zero coupon inflation-linked swaps.

Longer-term market-based inflation expectations have declined somewhat, while survey-based measures remained stable. Since early March market-based measures of inflation expectations have declined across all maturities (see Chart 8). The five-year forward inflation rate five years ahead declined to around 1.6%, which is around 10 basis points lower than the level observed in early March 2017. By contrast, the survey-based measures for long-term inflation expectations for the euro area from the April 2017 ECB Survey of Professional Forecasters (SPF) remained stable at 1.8%.

Residential property prices in the euro area accelerated further. According to the ECB's residential property price indicator, prices for houses and flats in the euro area increased by 3.8% on a year-on-year basis in the fourth quarter of 2016, up from 3.4% in the third quarter, which points to a strengthening and broadening of the house price cycle.

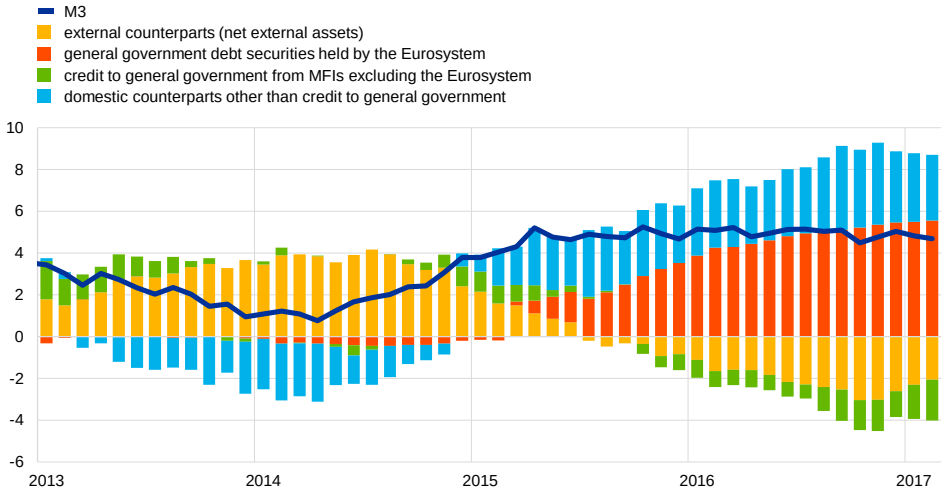
5 Money and credit

Broad money growth remained robust. The annual growth rate of M3 remained broadly stable in February 2017 (at 4.7%, after 4.8% in January), hovering around a rate of 5.0% since mid-2015 (see Chart 9). The low opportunity cost of holding liquid deposits in an environment of very low interest rates and the impact of the ECB's monetary policy measures continued to support M3 growth. Annual M1 growth was again the main contributor to M3 growth. Its pace remained stable in February (at 8.4%).

Chart 9

M3 and its counterparts

(annual percentage changes, percentage point contributions)



Source: ECB.
Notes: "Domestic counterparts other than credit to general government" includes MFIs' longer-term financial liabilities (including capital and reserves), MFI credit to the private sector and other counterparts. The latest observation is for February 2017.

Broad money growth was again driven by domestic sources of money creation. Purchases of debt securities in the context of the public sector purchase programme (PSPP) continued to have a considerable positive impact on M3 growth (see the orange bars in Chart 9). By contrast, the contribution of credit to general government from monetary financial institutions (MFIs) excluding the Eurosystem remained negative (see the green bars in Chart 9).

Domestic counterparts other than credit to general government also exerted a positive impact on M3 growth (see the blue bars in Chart 9). On the one hand, this reflects the gradual recovery in the growth of credit to the private sector. On the other hand, the significantly negative annual rate of change in MFIs' longer-term financial liabilities (excluding capital and reserves) continued to support M3 growth. This is partly explained by the flatness of the yield curve, which is linked to the ECB's monetary policy measures and has made it less attractive for investors to hold long-term deposits and bank bonds. The availability of the targeted longer-term refinancing operations (TLTROs) as an alternative to longer-term market-based bank funding also played a role.

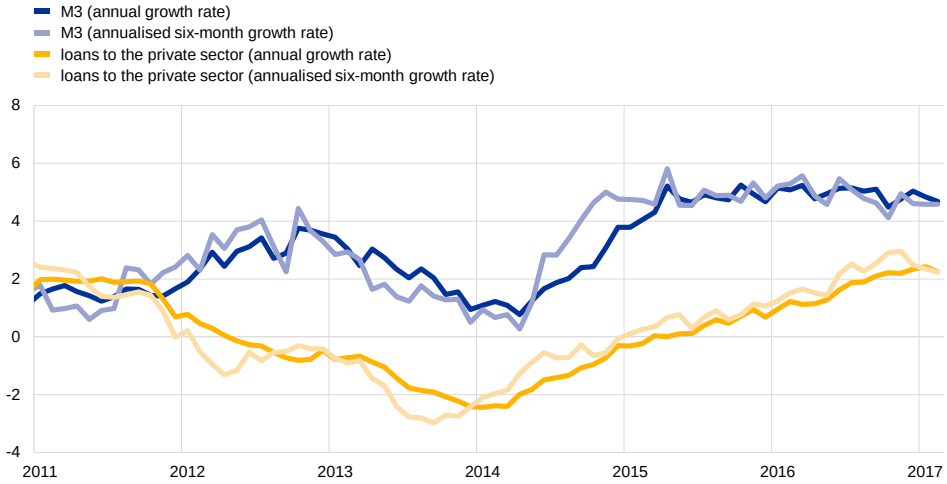
The MFI sector's net external asset position continued to exert downward pressure on annual M3 growth (see the yellow bars in Chart 9). This development reflects ongoing capital outflows from the euro area. PSPP-related sales of euro area government bonds by non-residents make an important contribution to this trend.

The recovery in loan growth is proceeding. The annual growth rate of MFI loans to the private sector (adjusted for sales, securitisation and notional cash pooling) was broadly stable in February (see Chart 10). Across sectors, the annual growth of loans to non-financial corporations (NFCs) decreased somewhat, while that of loans to households remained stable. 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 the recovery in loan growth. 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 10

M3 and loans to the private sector

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



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

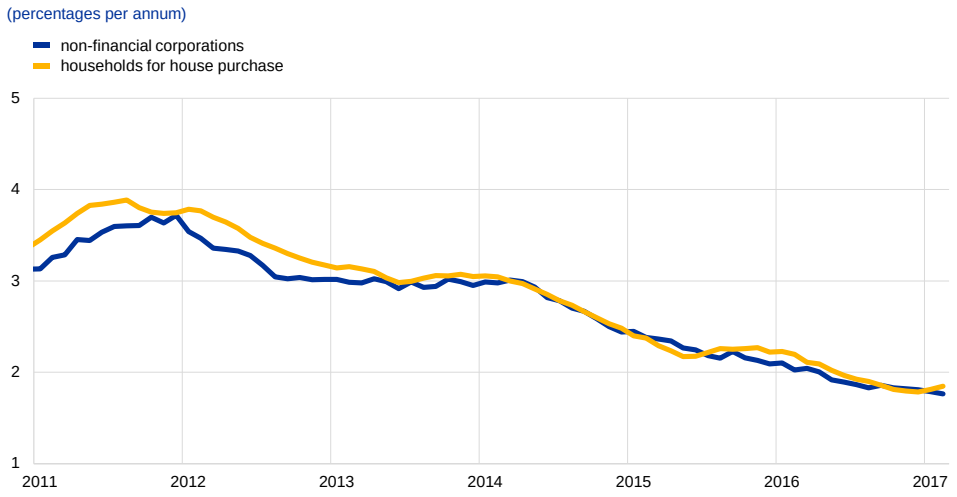
The April 2017 euro area bank lending survey **suggests that loan growth continued to be supported by eased lending conditions and increasing demand across all loan categories.** In the first quarter of 2017, credit standards for loans to enterprises and for loans to households for house purchase eased slightly. The ECB's expanded asset purchase programme (APP) has had an easing impact on credit terms and conditions across all loan categories. The net easing impact was stronger for terms and conditions than for credit standards. Euro area banks reported that the APP has contributed to an improvement of their liquidity position and their market financing conditions. They have mainly used the liquidity obtained from the APP to grant loans. Furthermore, the ECB's negative deposit facility rate was said to be having a positive effect on lending volumes, but weighing on banks' net interest income. Banks also reported increasing net loan demand from households and NFCs. This increase was driven by a variety of factors, in particular the low general

level of interest rates, merger and acquisition activity and favourable housing market prospects.

The decline in bank lending rates, which started in early 2014, has flattened at the beginning of 2017 (see Chart 11). Between May 2014 and February 2017, composite lending rates on loans to euro area NFCs and households fell by 117 and 106 basis points, respectively. Composite lending rates for NFCs and households have decreased by significantly more than market reference rates since the announcement of the ECB's credit easing measures in June 2014. The reduction in bank lending rates on NFC loans was especially 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. 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 11

Composite bank lending rates for NFCs and households



Source: ECB.
Notes: Composite bank lending rates are calculated by aggregating short and long-term rates using a 24-month moving average of new business volumes. The latest observation is for February 2017.

The net issuance of debt securities by NFCs remained robust in the first quarter of 2017. The latest ECB data show that the net issuance of debt securities by euro area NFCs increased again in January and February 2017, after declining in December 2016 mainly due to seasonal factors. Issuance activity continued to be supported by the ECB's purchases of non-bank investment-grade corporate bonds, among other factors. Preliminary data suggest that issuance remained robust in March. The net issuance of listed shares has been modest in the first months of 2017.

Financing costs for euro area NFCs are estimated to have remained favourable in the first months of 2017. In the first quarter of 2017, the overall nominal cost of

external financing for NFCs is estimated to have barely changed compared with December 2016. The level observed in March was only slightly above the historical low level recorded last summer. However, the cost of equity financing remains at high levels compared with the cost of debt financing, reflecting a relatively high equity risk premium. By contrast, the cost of debt financing has continued to decline in recent months, thus reaching a new historical low.

Boxes

1 The ECB's asset purchase programme and TARGET balances: monetary policy implementation and beyond

This box analyses the increase in TARGET balances since the start of the asset purchase programme (APP) and explains why the current dynamics differ from those observed during previous episodes of rising balances.[2] TARGET balances are the claims and liabilities of euro area national central banks (NCBs) vis-à-vis the ECB that result from cross-border payments settled in central bank money.[3] Net payment inflows into a country increase the TARGET claim (or reduce the TARGET liability) of its NCB while net payment outflows have the opposite effect. The total TARGET balance, which is the sum of all positive balances, is only affected when central bank money flows between countries with positive and negative balances.[4] Cross-border flows of central bank money, as reflected in changes in TARGET balances, are recorded in the balance of payments of euro area countries.[5] According to balance of payments accounting, these flows must be mirrored in other components of the balance of payments, such as the current account or portfolio investment flows.

Sizeable TARGET balances can be a consequence of the injection of large amounts of excess liquidity by the euro area's decentralised central banking system. TARGET balances emerge when the central bank reserves created in one jurisdiction flow to another. During the sovereign debt crisis, there was a *demand-driven* increase in excess liquidity as banks substituted Eurosystem funding for market-based funding that had dried up. Although the initial provision of liquidity via refinancing operations was TARGET-neutral,[6] TARGET balances increased as this liquidity subsequently flowed from vulnerable to less-vulnerable countries in the context of severe market stress.[7] Since the start of the expanded APP, however, the

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2 "TARGET" stands for "Trans-European Automated Real-time Gross settlement Express Transfer system". In May 2008, TARGET2 fully replaced the former TARGET system as the real-time gross settlement system owned and operated by the Eurosystem. In the interests of readability, the term "TARGET balances" is used here to describe the balances accumulated in TARGET and TARGET2.

3 In addition, the ECB and the NCBs of five non-euro area Member States that participate in TARGET2 (Bulgaria, Croatia, Denmark, Poland and Romania) also have TARGET balances.

4 The total TARGET balance increases if, on a net basis, central bank money flows from a country with a liability to a country with a claim, and it decreases if that money flows in the opposite direction. By contrast, flows between two countries with claims (or two countries with liabilities) change the composition, but not the size, of the total TARGET balance.

5 If a euro area country sends more funds abroad via TARGET than it receives, this will be offset by an equally-sized liability of the country's NCB vis-à-vis the ECB in the financial account of the balance of payments under the item "other investment of the national central bank".

6 Monetary financial institutions (MFIs) can only participate in refinancing operations through their NCB. The liquidity is allotted to the participating MFI via a credit to its current account held at the NCB. The implementation of refinancing operations entails no cross-border payments and is therefore TARGET-neutral.

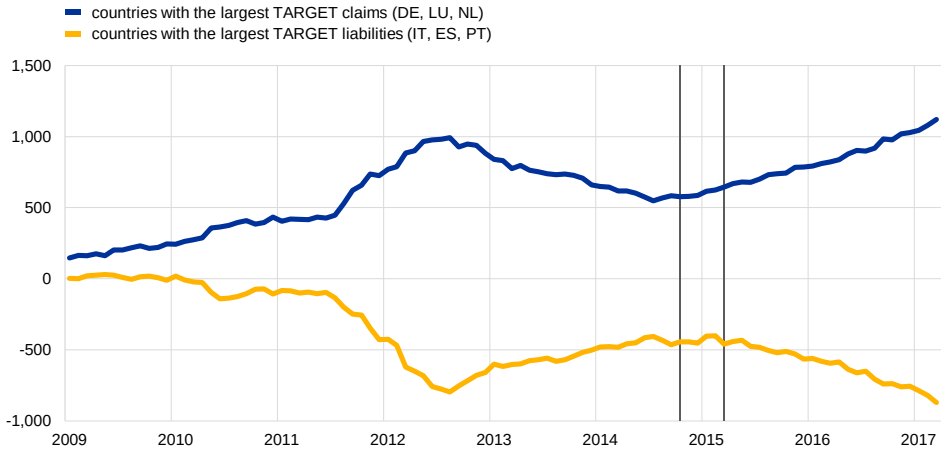
7 Under the fixed-rate, full allotment tender procedure, demand for Eurosystem refinancing was fully accommodated subject to collateral availability, which allowed significant growth in excess liquidity. For further discussion, see the article entitled "TARGET balances and monetary policy operations", *Monthly Bulletin*, ECB, May 2013.

renewed increase in excess liquidity has been predominantly *supply-driven*, resulting from asset purchases by NCBs and the ECB rather than stress-related recourse to refinancing operations.[8] The APP – and in particular the public sector purchase programme (PSPP) – gives rise to increasing TARGET balances (see Chart A) by inducing large cross-border liquidity flows. These flows arise (i) during APP implementation and (ii) via further portfolio rebalancing.

Chart A

Sum of TARGET balances for the three NCBs with the largest claims and the three with the largest liabilities

(EUR billions; end-of-month data)



Source: ECB.
Notes: The three countries with the largest TARGET claims at the end of March 2017 were Germany, Luxembourg and the Netherlands, while the three with the largest TARGET liabilities were Italy, Spain and Portugal (although the ECB's liability is actually greater than that of Portugal). The vertical black lines mark the commencement of purchases under the APP and the PSPP in October 2014 and March 2015, respectively. The latest data are for March 2017.

The financial structure of the euro area contributes to the current increase in TARGET balances because cross-border payments are an inherent feature of decentralised APP implementation in an integrated market. APP implementation is distinct from that of refinancing operations because it can entail immediate cross-border payments, as purchases are not limited by national borders. In fact, around 80% of APP purchases by volume have involved non-domestic counterparties, while around 50% have involved counterparties resident outside the euro area, many of which are concentred in the United Kingdom.[9] The latter have historically accessed TARGET2 via major euro area financial centres, particularly Germany and, to a

[8] Around 85% of the increase in liquidity provided through euro-denominated open market operations between the end of February 2015 (i.e. prior to the commencement of the PSPP) and 31 March 2017 was due to the APP. All of the increase in recourse to Eurosystem refinancing operations over the same period reflects participation in targeted longer-term refinancing operations (TLTROs). Participation in TLTROs should not be interpreted as a sign of stress-related recourse to Eurosystem refinancing, as the very attractive pricing of these operations was a key motive for participation (see, for example, the January 2017 euro area bank lending survey).

[9] In this context, "non-domestic" refers to a counterparty located in a country which is different from that of the purchasing NCB. This includes counterparties located in other euro area countries. Counterparties may not necessarily be the legal owner of the security; they may be acting as intermediaries, holding securities and managing transactions on behalf of the owners.

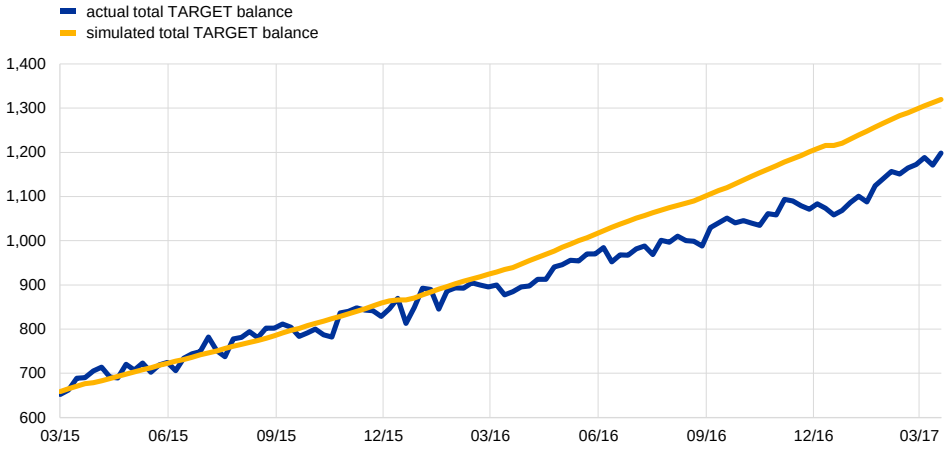
lesser extent, the Netherlands.[10] The main financial centres in the euro area have always been located in countries which, during the sovereign debt crisis, came to be viewed as less vulnerable.[11] The settlement of APP transactions is therefore associated with structural cross-border flows to these locations.[12]

The rise in the total TARGET balance has followed the upward path implied by cross-border payments for APP transactions, suggesting that other financial flows did not further increase the balance after the implementation of the APP. Chart B shows how the total TARGET balance has actually evolved alongside a simulated balance illustrating how it would have evolved if the only cross-border payments in the system had been those stemming from APP implementation.[13] The actual balance is currently below the simulated balance, indicating that subsequent cross-border liquidity flows are not giving rise to additional increases in the total TARGET balance; it instead suggests that there are some net cross-border liquidity flows back to countries with TARGET liabilities from those with claims.

Chart B

Total TARGET balance since the launch of the PSPP and a simulated balance

(EUR billions; weekly data)



Sources: ECB, TARGET2 and ECB staff calculations.
Notes: The simulated TARGET balance is calculated using APP transaction data and information on the location of the TARGET accounts of APP counterparties (the ECB's balance is treated separately from balances of non-euro area countries). The simulated balance shows how the total TARGET balance would have evolved since March 2015 if the only cross-border payments in the system had been the liquidity flows from central banks to counterparties' TARGET2 accounts resulting from APP purchases. The latest data are for March 2017.

10 The locations used by non-euro area banks for participation in TARGET2 are the result of free choice. Banks located in the European Economic Area (EEA) that are eligible to become direct participants in TARGET2 can choose the NCB with which they want to open a TARGET2 account, while other non-euro area banks choose correspondent banks for accessing TARGET2, typically reflecting historical relationships. The locations have remained largely unchanged since TARGET2 went live in 2007/08.

11 Evidence from the original TARGET payment system indicates that Germany and the United Kingdom were major financial centres well before the onset of the global financial crisis (see Cabral, I., Dierick, F. and Vesala, J., "Banking integration in the euro area", *Occasional Paper Series*, No 6, ECB, 2002). This is still the case, but the United Kingdom is not a direct participant in TARGET2; Germany is the main location through which UK-based banks access TARGET2, reinforcing Germany's role as a major financial centre.

12 For more details on how the implementation of the APP affects TARGET balances, see the box entitled "TARGET balances and the asset purchase programme", *Economic Bulletin*, Issue 7, ECB, 2016.

13 The simulation is based on transaction-level data and maps the payments from purchasing central banks to the TARGET account used by the selling counterparties.

Payments related to subsequent portfolio rebalancing are also affected by the financial structure and keep TARGET balances elevated. Since the launch of the APP, there has been a broad-based rebalancing towards non-euro area debt securities in the euro area as a whole which has been driven to a significant extent by the persistently negative interest rate differentials between euro area bonds and bonds issued by other advanced economies.[14] Euro area residents' net purchases of non-euro area debt securities in this period have consisted almost exclusively of debt securities issued by other advanced economies, in particular the United States. Such international portfolio rebalancing usually takes place through actors located in major euro area financial centres, thereby contributing to the accumulation of reserves in particular locations and to the persistence of TARGET balances.[15] This mechanism is evident in the net external assets of a country's MFIs, which mirror the transactions of the non-banking sector with the rest of the world (see Chart C) and the way in which the associated payment flows are channelled (see Chart D).[16] A breakdown of MFIs' net external assets for the largest TARGET-liability countries shows that the payment flows associated with international portfolio rebalancing are mainly channelled via TARGET.[17]

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

[15] With respect to equity investment, country-level data for the largest euro area economies point to substantial intra-euro area cross-border flows into investment funds concentrated in major euro area financial centres, most notably Luxembourg.

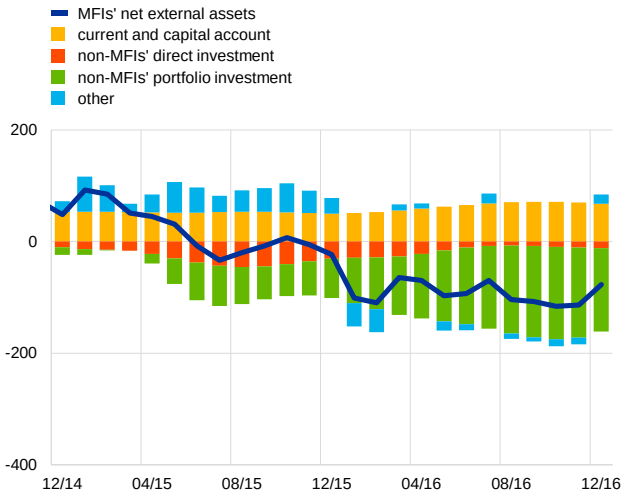
[16] For further details on the monetary presentation of the balance of payments, see Bê Duc, L., Mayerlen, F. and Sola, P., "The monetary presentation of the euro area balance of payments", *Occasional Paper Series*, No 96, ECB, 2008.

[17] Evidence indicates that this is the case regardless of whether the recipient of the payment is a euro area resident. According to the ECB's Securities Holdings Statistics (SHS), in the APP period, around half of the increase in net purchases of foreign debt securities by residents in the three countries which currently have the largest TARGET liability positions (i.e. Italy, Spain and Portugal) occurred vis-à-vis non-euro area residents.

Chart C

Monetary presentation of the balance of payments for the countries with the largest TARGET liabilities

(EUR billions; 12-month flows)

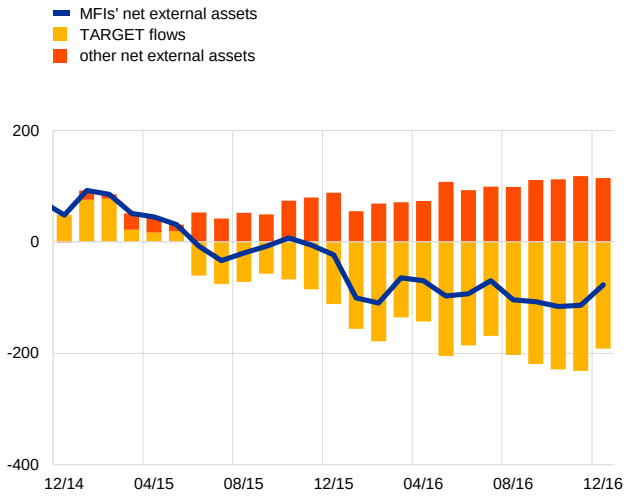


Source: ECB staff calculations.
Notes: Aggregate of the three countries with the largest TARGET liabilities: Italy, Spain and Portugal. Country-level MFIs' net external assets consist of MFIs' positions vis-à-vis non-euro area residents, and those vis-à-vis residents in other euro area countries (the latter include inter-NCB positions, mainly reflecting TARGET balances). TARGET flows reflect the 12-month difference in a country's TARGET liabilities. Sectoral balance-of-payments data are interpolated from quarterly data. The latest data are for December 2016.

Chart D

MFIs' net external assets in the countries with the largest TARGET liabilities – breakdown by intermediation channel

(EUR billions; 12-month flows)



Source: ECB staff calculations.
Notes: Aggregate of the three countries with the largest TARGET liabilities: Italy, Spain and Portugal. Country-level MFIs' net external assets consist of MFIs' positions vis-à-vis non-euro area residents, and those vis-à-vis residents in other euro area countries (the latter include inter-NCB positions, mainly reflecting TARGET balances). TARGET flows reflect the 12-month difference in a country's TARGET liabilities. Sectoral balance-of-payments data are interpolated from quarterly data. The latest data are for December 2016.

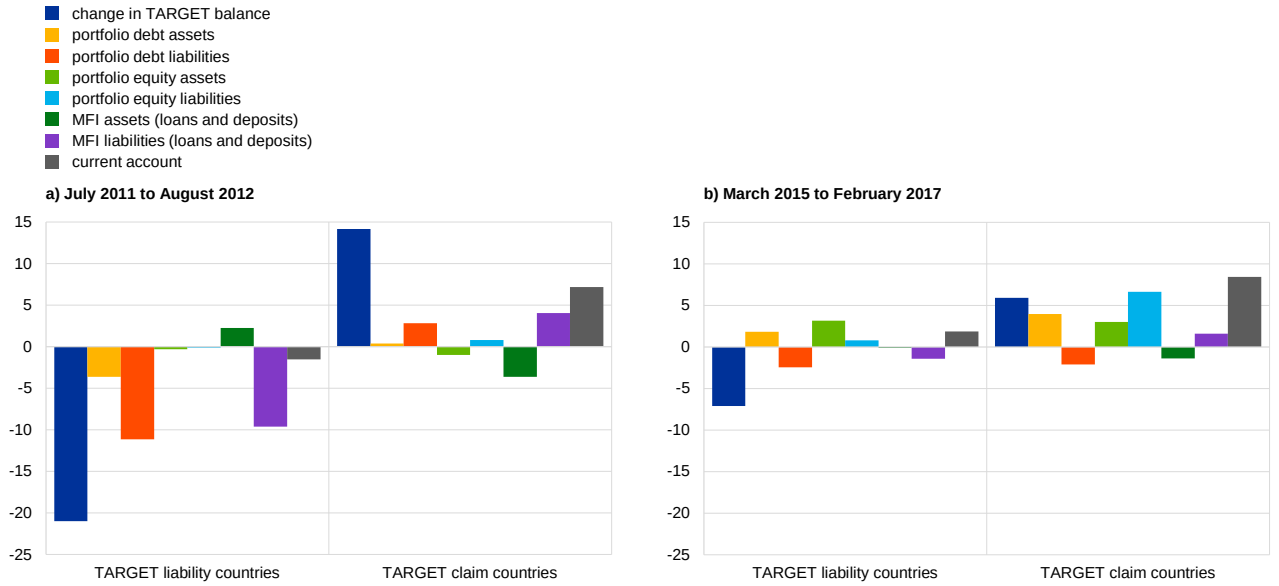
Since the launch of the PSPP, developments in the balance of payments of the euro area countries with the largest TARGET claims and those with the largest TARGET liabilities have differed markedly from the developments observed during the sovereign debt crisis and have followed broadly similar patterns in both groups. In the period from mid-2011 to mid-2012, TARGET-liability countries experienced a sudden stop in foreign inflows to domestic MFIs and bond markets (see Chart Ea). At the same time, domestic residents reduced their holdings of foreign securities to repatriate liquidity, while domestic MFIs shifted funds into foreign deposits. Moreover, TARGET-liability countries were running a combined current account deficit. Correspondingly, TARGET-claim countries received foreign inflows to domestic MFIs and securities, while recording a surplus in the current account. Since the start of the PSPP, foreign investors have reduced their exposure to debt securities in TARGET-liability countries, albeit on a markedly smaller scale than during the sovereign debt crisis, and in a similar fashion as in TARGET-claim countries (see Chart Eb). Moreover, residents from both country groups have rebalanced towards foreign debt and equity securities, while recording inflows into domestic equities.[18] Following the external adjustment process in TARGET-liability countries over recent years, the current account has registered a surplus since the start of the PSPP, as has continued to be the case in TARGET-claim countries.

[18] Cross-border banking flows have been relatively subdued since the launch of the APP, with MFIs in both country groups slightly reducing their foreign assets in terms of loans and deposits. In TARGET liability countries, MFIs recorded a reduction in cross-border banking liabilities, while these increased somewhat in TARGET claim countries.

Chart E

Changes in TARGET balances and selected balance of payments developments

(percentages of GDP; cumulated monthly flows)



Sources: ECB and ECB staff calculations.
Notes: TARGET claim countries include Germany, Luxembourg and the Netherlands. TARGET liability countries include Italy, Spain and Portugal. For assets, a positive (negative) value indicates net purchases (sales) of foreign assets by domestic residents. For liabilities, a positive (negative) number indicates net purchases (sales) of domestic assets by foreign residents. GDP is converted to monthly frequency.

Overall, the underlying factors driving the current increase in TARGET balances are of an intrinsically different nature to those in previous episodes of rising balances. The increase in TARGET balances in the period from mid-2011 to mid-2012 was triggered by a replacement of private sector funding of banks by central bank funding in a period of stressed bank funding conditions, as also evidenced by a range of financial market, banking and balance of payments statistics.[19] By contrast, the current increase in TARGET balances is largely attributable to the interplay between the decentralised implementation of the APP and the financial structure of the euro area.

[19] See the box entitled "What is driving the renewed increase in TARGET2 balances?", *Quarterly Review*, BIS, March 2017.

2 Recent developments in youth unemployment

The rate of youth unemployment peaked at above 24% in the euro area in 2013 for the age group 15-24. Since then, the youth unemployment rate has declined faster than the total unemployment rate and remained around 21% in 2016, about 6 percentage points higher than in 2007. Against this background, this box describes some key recent features of youth unemployment across the euro area countries.

A close monitoring of developments in youth unemployment is necessary in view of potential scarring effects of unemployment, especially at the beginning of one's career.[20] Long periods of unemployment at a young age can result in increased risks of future unemployment, human capital losses and lower earnings. Youth unemployment rates are normally higher than total unemployment rates, but large differences across countries point to potential problems with labour market functioning in some countries.

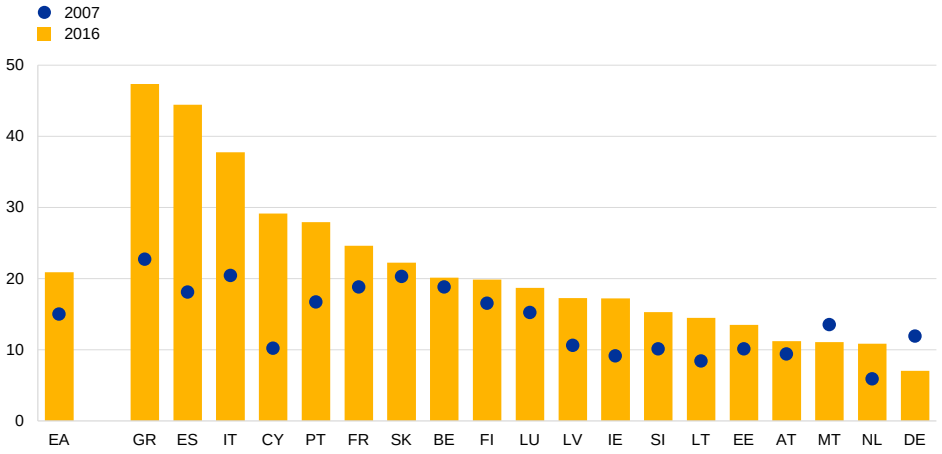
Youth unemployment in the euro area remains above its pre-crisis level, but the ratio of youth unemployment to total unemployment has hardly changed. Youth unemployment is particularly high in Greece, Spain and Italy, following sharp rises during the crisis (Chart A). However, in spite of the very high youth unemployment rates, the ratio of youth unemployment to total unemployment did not change significantly between 2007 and 2016, which suggests that youth unemployment has moved in line with total unemployment (Chart B). Thus the very high levels of youth unemployment during the crisis reflect both the intensity of the crisis and relatively high youth unemployment in the pre-crisis period. In this regard, it is worth noting the large heterogeneity across countries. While for the euro area as a whole, the youth unemployment rate is 2.2 times higher than the total unemployment rate, in Italy and Luxembourg it is more than 3 times higher. By contrast, the youth unemployment rate in Germany is only about 1.7 times higher than the total unemployment rate.

[20] See, for instance, Arulampalam, W., "Is Unemployment Really Scarring? Effects of Unemployment Experience on Wages", *The Economic Journal*, Vol. 111, No 475, 2011, pp. 585-686.

Chart A

Youth unemployment rates in the euro area

(percentages; age group 15-24)

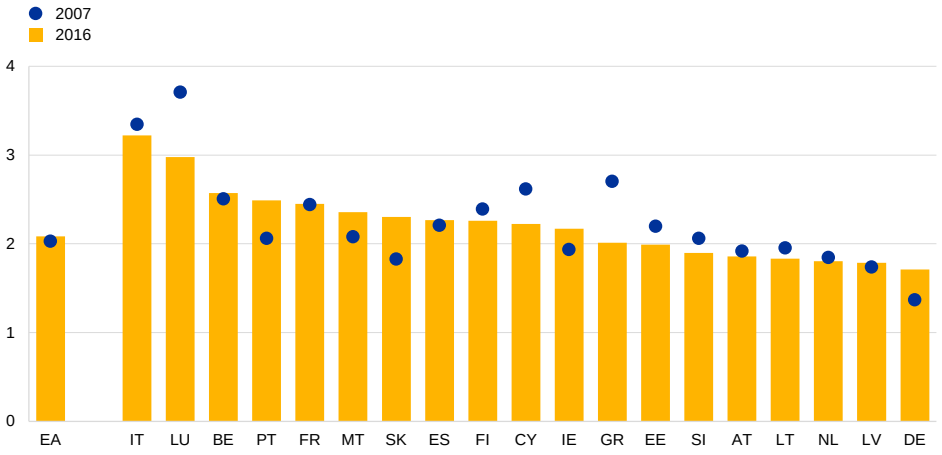


Source: Eurostat.

Chart B

Ratio of youth unemployment rate to total unemployment rate

(ratio; age groups: youth 15-24, total 15-74)



Source: Eurostat.

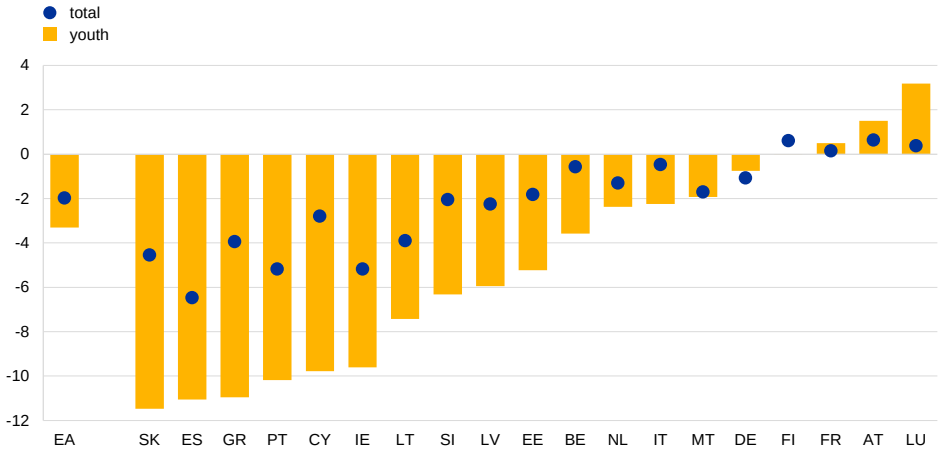
The youth unemployment rate is declining faster than the total unemployment rate, reflecting its higher sensitivity to the cycle. Between 2007 and 2013 the youth unemployment rate in the euro area increased by about 9 percentage points. In the same period, the total unemployment rate increased by about 4.5 percentage points (i.e. half as much as youth unemployment). Similarly, during the recovery, youth unemployment has been declining faster than total unemployment. Between 2013 and 2016, the youth unemployment rate declined by about 3.5 percentage points, while the total unemployment rate decreased by about 2 percentage points (Chart C). Slovakia, Greece and Spain – followed by Portugal, Ireland and Cyprus – are among the countries with the largest reductions in youth unemployment. In

Greece and Spain, the declines in unemployment rates were accompanied by declines in participation rates.[21]

Chart C

Change in unemployment rates since 2013

(percentage points; age groups: youth 15-24, total 15-74)



Source: Eurostat.

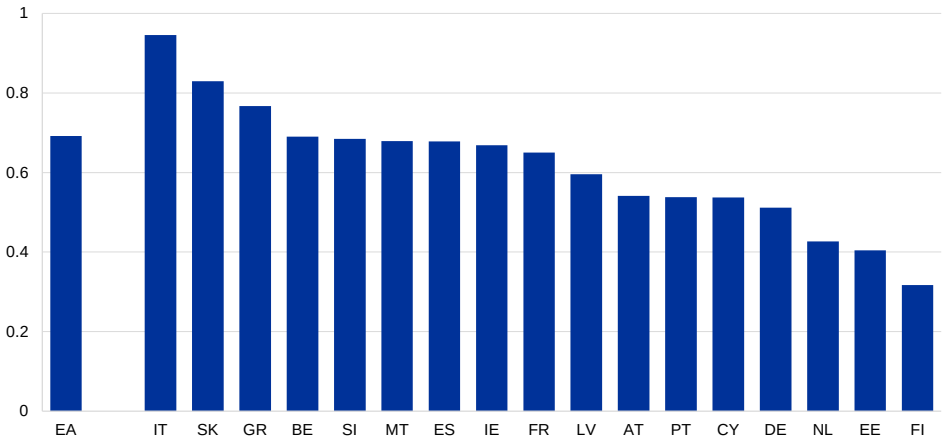
The share of young unemployed remaining unemployed for more than a year is lower than the share of total unemployed doing so. As expected, the share of young people that remain unemployed for more than one year is smaller than the corresponding figure for total unemployed, reflecting the fact that young people are more prone to intermittent transitions between activity and inactivity (e.g. to acquire further education or training). However, in some countries the share for young unemployed is close to the share for total unemployed (Chart D).

[21] There was a general decline in youth participation during the crisis. At the same time, the share of young people who are not in education or training and also not looking for jobs has remained relatively stable since 2007, leading to the conclusion that the decline in participation during the crisis reflects decisions to stay in or return to education.

Chart D

Ratio of long-term youth unemployment rate to total long-term unemployment rate

(ratio; 2015)



Source: Eurostat.
Note: Long-term unemployment is defined as a period of unemployment of more than one year. The long-term unemployment rate is computed as a percentage of long-term unemployed among all unemployed in the respective age group.

Overall, the relationship between youth unemployment and total unemployment has not changed since the crisis, but the high costs associated with youth unemployment indicate the need for policy measures to improve labour market functioning in some countries. Such policy measures include: (1) improving the quality and the labour market relevance of education, including via well-developed apprenticeship systems; (2) ensuring a well-functioning and responsible wage setting system, including when setting minimum wages; (3) enhancing the role of public employment services and the provision of active labour market policies with a view to supporting the unemployed during labour market transitions and increasing their employability; (4) increasing working time flexibility in order to facilitate a combination of work and education and to ease the transition from education to employment in the labour market.

3 Assessing labour market slack

Despite broad improvements in euro area labour markets since the start of the recovery and a marked decline in unemployment rates across many euro area economies, wage growth remains subdued, suggesting that there is still a considerable degree of labour market slack. This box looks at developments in wider measures of labour market slack in comparison with the rather narrow definition of the unemployment rate.

The broadening of the recovery in activity is becoming increasingly apparent in euro area labour markets, with more countries and sectors recording positive employment growth. Overall, the "employment-rich" recovery[22] has led to an increase in the number of persons employed of just under five million since the middle of 2013, offsetting virtually all of the employment losses seen over the crisis period. Moreover, there has been a notable broadening of the labour market recovery, as evidenced by the narrowing of the dispersion of employment growth rates across euro area economies and sectors over the past two years, and almost all euro area countries are now recording positive quarter-on-quarter employment growth (see Chart A). Unemployment has declined somewhat faster than expected – albeit still remaining high compared with pre-crisis levels (see Chart 6 in Section 3) – and labour shortages reportedly appear to be emerging in some countries (most notably in Germany).

Chart A

Dispersion of employment growth rates across euro area countries

(left-hand scale: weighted standard deviation; right-hand scale: percentage shares of the euro area 19)

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

However, despite significant increases in employment, euro area wage growth remains subdued, suggesting that there may still be a high degree of underutilisation of labour – or labour market "slack" – over and above the level suggested by the unemployment rate. Chart B shows that since the start of

[22] See the article entitled "The employment-GDP relationship since the crisis", *Economic Bulletin,* Issue 6, ECB, 2016.

Economic and Monetary Union (EMU) labour shortages have typically tended to signal rising wage pressure, but the co-movement seems to have broken down over the course of the recovery, which may suggest that the degree of labour market slack is still high and is containing wage growth.[23]

Chart B

Co-movement of euro area labour shortages and wage growth since the start of EMU

(left-hand scale: diffusion indices, four-quarter moving averages; right-hand scale: annual percentage changes)

Sources: Eurostat and ECB calculations.
Notes: The labour shortages series are calculated as four quarter moving averages and have been normalised for long-term averages. The latest observations are for the fourth quarter of 2016 (compensation per employee and compensation per hour worked) and for the first quarter of 2017 (labour shortages indicators).

The unemployment rate is based on a rather narrow definition of labour underutilisation. According to the International Labour Organization's definition of unemployment (on which the euro area headline unemployment rate is based), job-seekers are considered unemployed if they are (i) without work; (ii) available to start working within two weeks; and (iii) actively seeking work.[24] However, wider definitions may also be relevant for assessing the overall degree of labour market slack, with two groups being particularly worthy of consideration: first, those who are without work but do not meet one of the other two criteria; and, second, those who are employed on a part-time basis but want to work more hours. The first group falls within the inactive category and the second group within the employed category.

Currently around 3½% of the euro area working age population are marginally attached to the labour force – that is, categorised as inactive, but simply competing less actively in the labour market. Referred to as the "potential additional labour force",[25] this category comprises both (i) those who are not currently seeking work, despite being available (mainly "discouraged" workers; and

[23] This is not to deny the importance of other factors. Structural reforms to labour markets and wage-bargaining systems, as well as changes in the degree of forward and backward-looking price indexing in wage agreements and the low inflation environment, are also likely to have played a role in interrupting this correlation.

[24] See http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Unemployment.

[25] See the Eurostat article on underemployment and potential additional labour force statistics.

(ii) those who are actively seeking work, but are not (yet) available to begin work (perhaps because they have received a job offer with a start date some time in the future or because they are not able to start work within the next two weeks). The latter sub-group currently amounts to almost 1% of the euro area working age population, while the former sub-group is somewhat larger – currently amounting to around 2.6% of the working age population – with the majority being discouraged workers who are not actively seeking work because they do not think work is available. This sub-group, however, can be relatively quick to rejoin the labour force as labour market conditions improve.[26] While movements in the number of those who are "available, but not seeking work" are typically countercyclical (as is unemployment), the numbers reporting that they are "seeking work, but not available" had been following a downward trend prior to the recovery, but have remained flat since the rebound.

In addition, a further 3% of the working age population are currently underemployed (i.e. working fewer hours than they would like). Part-time employment has been rising across most euro area economies for over a decade, mainly owing to structural factors (such as the growth in services and in part reflecting the rise in female participation in the labour force).[27] However, a non-negligible share of these part-time workers would like to work more hours. Currently there are around seven million underemployed part-time workers across the euro area – an increase of around one million since the start of the crisis. Moreover, the number has declined only very modestly over the past two years, despite the robust employment growth seen during the recovery.

Combining the estimates of the unemployed and the underemployed with the broader measures of unemployment suggests that labour market slack currently affects around 18% of the euro area extended labour force.[28] This amount of underutilisation is almost double the level captured by the unemployment rate, which now stands at 9.5% (see Chart C). The broader indicator is widely used by both the US Bureau of Labor Statistics and the OECD.[29] As well as suggesting a considerably higher estimate of labour market slack in the euro area than shown by the unemployment rate, these broader measures have also recorded somewhat more moderate declines over the course of the recovery than the reductions seen in the unemployment rate.

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26 However, these workers may temporarily boost unemployment levels when they re-enter the labour force, before they find work.

27 See Box 6 entitled "Factors behind developments in average hours worked per person employed since 2008", *Economic Bulletin*, Issue 6, ECB, 2016.

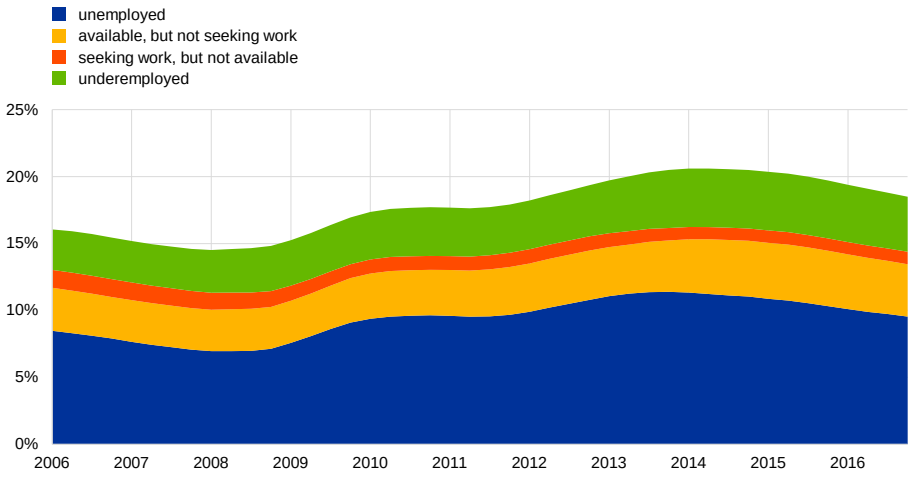
28 The figure is computed by expressing the numbers of unemployed and underemployed, together with estimates of those available but not seeking work and those seeking work but not available (the "potential additional labour force"), as a percentage of the extended labour force (i.e., the employed and the unemployed, who comprise the active labour force, plus the potential additional labour force).

29 The US Bureau of Labor Statistics refers to this measure as the "U6" indicator. Even broader measures are under investigation. See, for example, Hornstein, A., Kudlyak, M. and Lange, F., "Measuring resource utilization in the labor market", *Economic Quarterly*, Vol. 100(1), Federal Reserve Bank of Richmond, 2014.

Chart C

Broader estimates of labour underutilisation in the euro area

(percentages of the extended labour force, four-quarter moving averages)



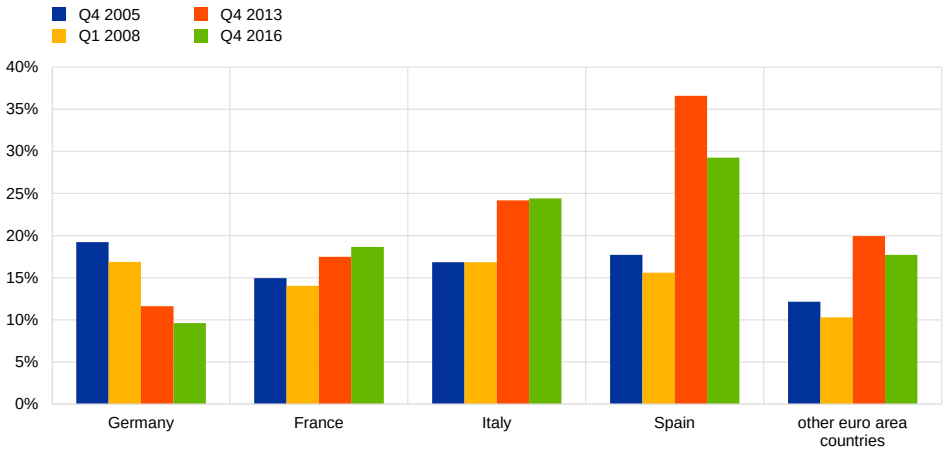
Sources: Eurostat and ECB calculations.
Notes: All components are expressed as percentages of the extended labour force (i.e. the active labour force plus those available, but not seeking work and those seeking work, but not available). The latest observations are for the fourth quarter of 2016.

Cross-country differences remain significant (see Chart D) – both in terms of levels of the broader indicator and when these levels are compared with developments in unemployment rates. In Germany, the broader indicator (and all three of the main components) has been declining since 2013, as has the actual unemployment rate, providing further evidence of growing tightness in the German labour market. Elsewhere, however, these broader measures show that the degree of labour market slack is still considerable. In France and Italy, broader measures of labour market slack have continued to increase throughout the recovery, while in Spain and in the other euro area economies, they have recorded some recent declines, but remain well above pre-crisis estimates.

Chart D

Broader estimates of labour underutilisation across euro area countries

(percentages of the respective labour force, four-quarter moving averages)



Sources: Eurostat and ECB calculations.
Note: All measures are expressed as percentages of the extended labour force (i.e. the active labour force plus those available, but not seeking work and those seeking work, but not available).

While these broader measures cannot be taken entirely at face value, euro area labour markets appear subject to a greater degree of labour market slack than the level suggested by the unemployment rate. These broader measures may overestimate the effective degree of labour market slack somewhat, in that they (i) overestimate the remaining capacity of underemployed part-time workers somewhat, since a proportion of their time (typically around half) is already spent working; (ii) may overestimate how far those in the potential additional labour force are willing and able to find work (i.e., the extent to which they are suitably skilled for local labour markets); and (iii) do not make allowances for the lower job finding probabilities of many of the very long-term unemployed (i.e., those out of work for two years or more – currently estimated to account for around one-third of the unemployment totals across the euro area).[30] Adjustments to the broader measures to deduct the very long-term unemployed and to allow for the time that the underemployed spend working still result in estimates of labour market slack of the order of 15% across the euro area in the final quarter of 2016 (on a four-quarter moving average basis).

Despite a clear improvement in many labour market indicators, labour markets in most euro area countries – with the notable exception of Germany – appear to still be subject to a considerable degree of underutilisation. The level of the broader indicator of labour underutilisation is still high, and this is likely to continue to contain wage dynamics.

[30] It is, for instance, well-documented that job finding probabilities differ considerably across sub-groups of the unemployed, but it does not necessarily follow that the job finding probability of those in the inactive category is zero – although it is, empirically, well below that of the unemployed who are available and actively seeking work. Much depends both on the intensity of individuals' job search and on employers' perceptions of the various sub-groups in the context of wider labour market conditions. On the other hand, many of the very long-term unemployed may be similar to those in the inactive category in terms of employability. See, for instance, Shimer, R., "The probability of finding a job," *American Economic Review: Papers & Proceedings*, Vol. 98(2), pp. 268-73, 2008; Shimer, R., "Reassessing the Ins and Outs of Unemployment", *Review of Economic Dynamics*, Vol. 15(2), pp. 127-48, 2012; and Hornstein, A., Kudlyak, M. and Lange, F., "Measuring resource utilization in the labor market", *Economic Quarterly*, Vol. 100(1), Federal Reserve Bank of Richmond, 2014.

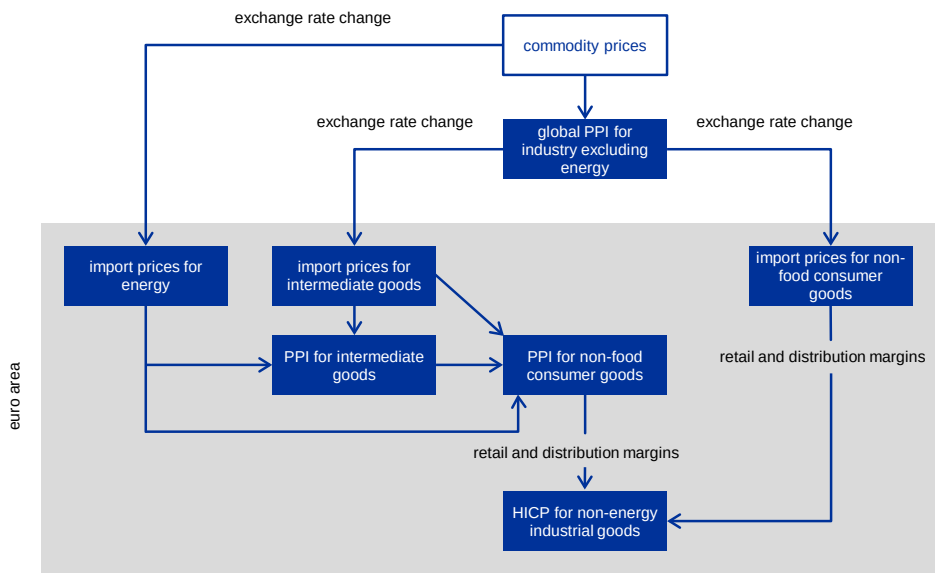
4 What can recent developments in producer prices tell us about pipeline pressures?

Consumer price inflation of non-energy industrial goods in the euro area has remained subdued thus far. The short-term outlook for this component of the Harmonised Index of Consumer Prices (HICP) can typically be informed by what are known as pipeline pressures. These pipeline pressures may have already emerged at early stages in the overall pricing chain. This box discusses recent developments in global and domestic producer prices, which are important indicators in the pricing chain.

Pipeline pressures often have their origin at the global level. In particular, commodity prices can pass through to euro area industrial producer prices via the cost of imported energy (see Chart A). This pass-through can also be more indirect if commodity prices have an impact on global non-energy producer prices. This may subsequently also have an impact on the price of imported goods, which form part of the supply chains used in domestic production. The annual rate of import prices for intermediate goods is continuing to increase rapidly. This is not only a reflection of the recovery in producer prices globally but also of the recent euro exchange rate depreciation. The recent upturn in euro area non-energy producer price inflation mirrors to a large extent that in global non-energy producer price inflation (see Chart B), reflecting the use of imported intermediate goods.

Chart A

Stylised overview of the supply price chain for HICP non-energy industrial goods

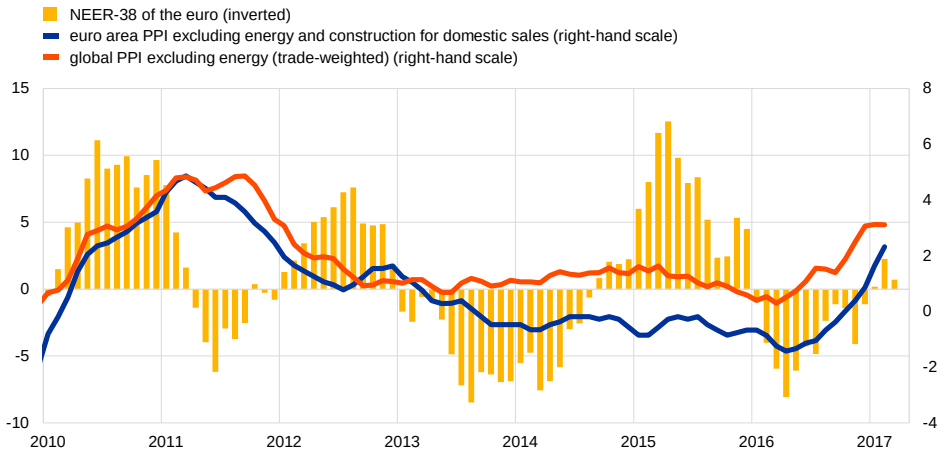


Source: ECB illustration.

Chart B

Producer prices for industry excluding energy for the euro area and globally

(annual percentage changes)



Sources: Eurostat and ECB calculations.
Notes: The global Producer Price Index (PPI) excluding the energy sector is an ECB estimate, compiled as a weighted average for 20 euro area trading partners, using their share in the extra-euro area export of goods. To the extent possible, the series uses PPI excluding the energy sector. For countries where this measure is not available, PPI inflation of the energy sector was subtracted from the total PPI inflation using the energy sector's weight in the respective economy. For a small number of countries, the contribution of the energy sector to the overall PPI was estimated.
The latest observations are for March 2017 for the nominal effective exchange rate of the euro against the currencies of 38 of the euro area's main trading partners (NEER-38) and February 2017 for the PPI.

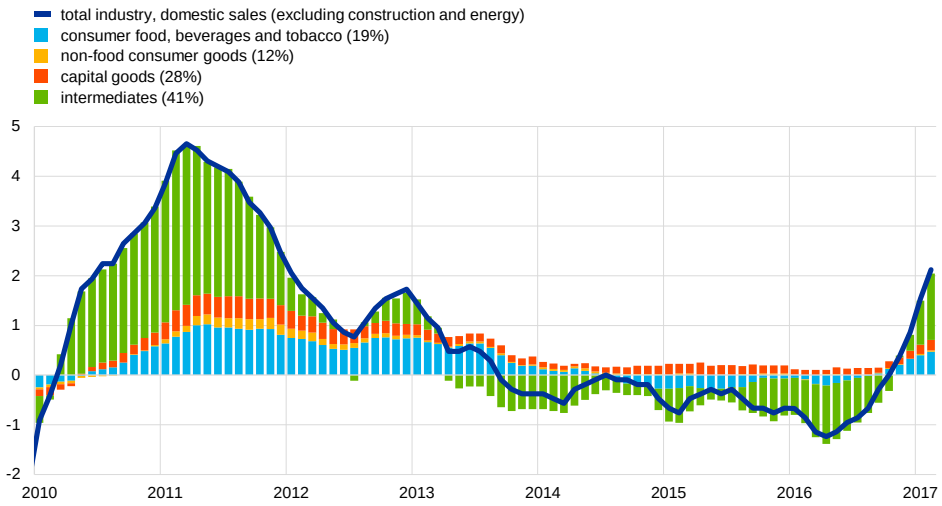
Recent producer price developments early in the pricing chain point to evidence of some pipeline pressures. Movements in headline producer price inflation (industry excluding construction and the energy sector) are typically dominated by those for the intermediate goods sector, reflecting both their high weight and amplitude (see Chart C). Headline producer prices can therefore not be taken as a direct indicator of price pressures for final consumer price inflation. However, the stronger and more sustained producer price developments are in intermediate goods industries that are further upstream in the production and pricing chain, the greater the likelihood is that they may be passed through to producer prices in non-food consumer goods industries. Correlation analysis suggests that producer price inflation in intermediate goods industries generally has its strongest co-movement (at 0.7 on average) with producer price inflation in non-food consumer goods industries with a lag of somewhat more than half a year[31]; however, there have been episodes where this co-movement lapses. The recent upturn in producer prices for intermediate goods could hence tentatively point to some pipeline pressures emerging at later stages over the coming months.

[31] The maximum correlation may be with a lag of more than half a year. However, the impact that a change in producer prices for intermediate goods has in a given month on producer prices for non-food consumer goods may begin to show as early as in the initial months thereafter. A more rigorous pass-through analysis would usefully draw on impulse responses derived from a dedicated model, but this is beyond the scope of this box.

Chart C

Producer prices for total industry and components

(annual percentage changes, percentage point contributions)



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

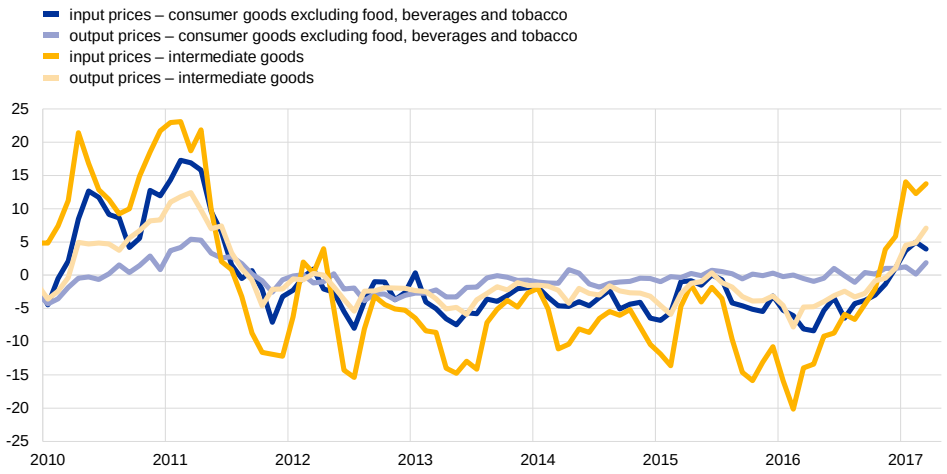
Pipeline price pressures tend to be gradually dampened along the production chain. It is likely that the degree of dampening depends on the number of production stages (from crude materials to final consumption goods) and the timing of the respective pricing decisions. One explanation is that each stage may have some degree of manoeuvre to adjust margins and that there may be sufficient leeway in the timing of pricing to gauge the persistence of cost shocks from upstream stages. In this regard, firms may be making use of hedging instruments to protect themselves against the risk of, for example, exchange rate volatility. Moreover supply contracts can sometimes be fixed for several months ahead, thus offering a temporary buffer against cost shocks. The relative movements in Purchasing Managers' Index (PMI) input and output prices in the industrial sector suggest that there may generally be stronger variation in margins in the intermediate goods sector than in the non-food consumer goods sector – where the latter would be at the later stages of the pricing chain for consumer prices for non-energy industrial goods (see Chart D).[32] At the same time the upward movement in PMI input prices has been relatively stronger than in output prices in the non-food consumer goods sector, which according to correlation analysis could herald a pick-up in producer price inflation in that sector around half a year later.

[32] Input costs in the PMI survey do not include labour costs and so cannot be taken as an encompassing measure of production costs. Assessing the need and scope for adjusting margins is also difficult, since the data provide no reliable benchmark in terms of the level of margins.

Chart D

PMI survey data for intermediate goods and non-food consumer goods

(diffusion index, deviation from long-term average index value)



Sources: IHS Markit and ECB calculations.
Notes: Long-term averages are calculated over the period October 2002 to March 2017. The latest observations are for March 2017.

Producer prices of non-food consumer goods industries have continued to increase very moderately so far. Over the 12 months to February 2017, the year-on-year growth rate of prices charged in domestic sales hovered just above zero, while that of prices charged in sales in other euro area countries has often even been negative (see Chart E)[33]. Upward pipeline pressures for the corresponding prices at the consumer level have recently mainly come from import prices for non-food consumer goods, which have picked up to 0.6% year on year in February, the first positive reading in a year. Correlation analysis suggests that producer price inflation in non-food consumer goods industries has its strongest co-movement (at almost 0.7) with consumer price inflation in non-energy industrial goods with a lag of more than half a year.[34]

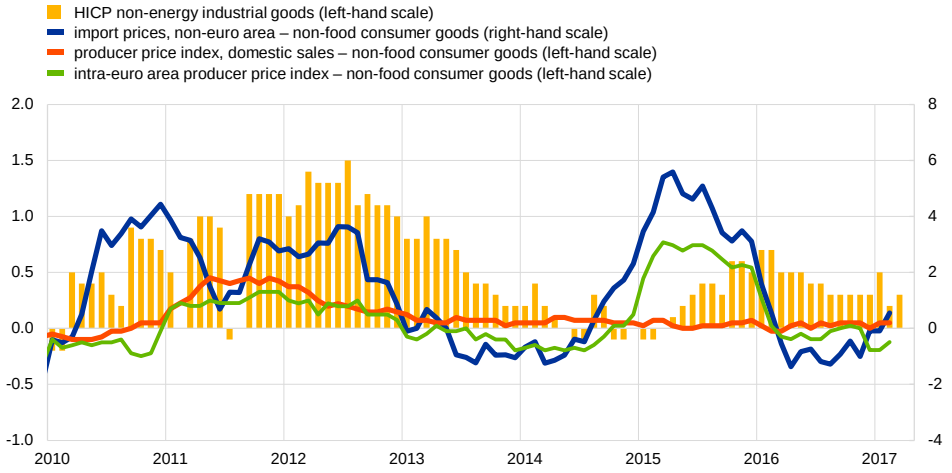
33 Of the total non-food consumer goods produced in the euro area, about 72% are produced and sold in the same euro area country (domestic sales) while 28% are produced in one euro area country and sold in another euro area country (intra-euro area sales).

34 While producer and import prices for consumer goods are indicators that refer to later stages of the pricing chain, any pressure emerging at these stages can still be enhanced or dampened by pricing behaviour at the distribution and retailing levels. The PMI for margins in non-food retailing, one of the few indicators available for these final stages, has hovered in a relatively narrow range in recent months and hence does not suggest that the latest indications from producer prices for consumer prices have been significantly blurred by any shifts in margins.

Chart E

Non-energy industrial goods consumer prices and producer price and import price inflation for non-food consumer goods for the euro area

(annual percentage change)



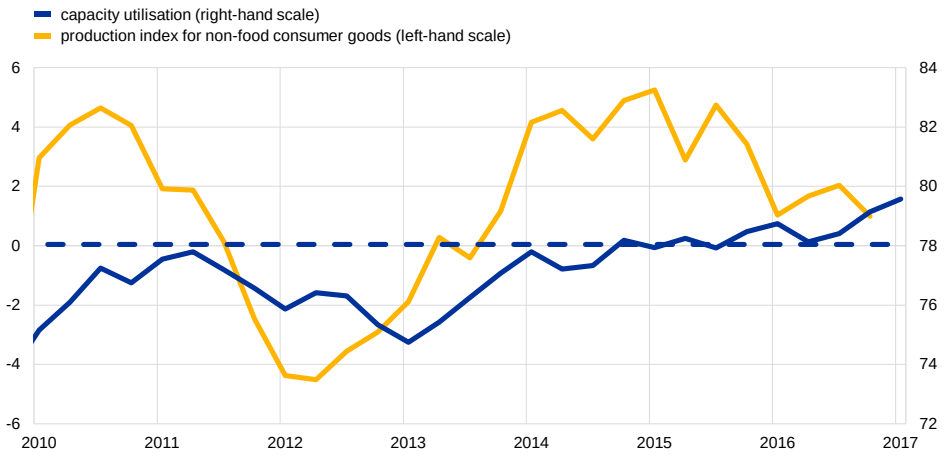
Sources: Eurostat and ECB calculations.
Note: The latest observations are for March 2017 for HICP non-energy industrial goods and February 2017 for the rest.

In summary, producer price data currently provide mixed signals regarding pipeline pressures for HICP non-energy industrial goods prices. While it is likely that some upward pressure has emerged at the early stages, it may take some more time for this to filter through to the later stages of the pricing chain. It is also likely that this upward pressure would be dampened through margin or other adjustments along the production chain unless firms could suspend such adjustment in an environment of strongly increasing demand. In this regard, annual growth in production volumes remains positive despite softening somewhat in recent quarters (see Chart F). Moreover, survey data on capacity utilisation in the non-food consumer goods industries, to the extent that they reflect the evolution of demand relative to supply, may point to some strengthening in pricing power.

Chart F

Capacity utilisation and production in the non-food consumer goods sector

(annual percentage changes; percentages)



Sources: Eurostat and ECB calculations.
Notes: The latest observations are for the fourth quarter of 2016 for production and the first quarter of 2017 for capacity utilisation. The broken blue line refers to the long-term average for capacity utilisation, which has been calculated using data from the first quarter of 1999 to the first quarter of 2017.

5 The targeted longer-term refinancing operations: an overview of the take-up and their impact on bank intermediation

Targeted longer-term refinancing operations (TLTROs) provide financing to euro area credit institutions with a maturity of up to four years at attractive conditions. Two series of operations were launched. The first series of eight operations (TLTRO-I) was announced in June 2014.[35] It was followed by a second series of four operations (TLTRO-II), announced in March 2016.[36] Under TLTRO-II, banks could borrow up to 30% of the amount of their existing stock of loans to non-financial corporations and households (excluding loans to households for house purchase). Moreover, banks were given the opportunity to repay funds borrowed under TLTRO-I early and switch to TLTRO-II funds. Such a shift of funding was rendered attractive for two reasons: first, it lengthened the maturity of bank funding and, second, it lowered the cost as the average cost of TLTRO-I funding stands at around 10 basis points, while the maximum rate banks will have to pay for TLTRO-II funding is zero.

The TLTROs provide incentives for bank lending to the real economy. In the case of TLTRO-I, the incentives for lending were two-fold. First, banks whose net lending over a reference period exceeded a bank-specific benchmark could borrow more in the final six TLTRO-I operations and the maximum additional amount was set at three times the amount by which their net lending had exceeded their benchmark. Second, banks which did not meet their lending benchmarks were required to repay their TLTRO-I borrowings early. Incentives for lending are provided in a different form under TLTRO-II. Rather than penalising banks that fail to meet their benchmarks, TLTRO-II provides rewards, in the form of lower interest rates, for banks which outperform their benchmarks. Banks whose eligible net lending in the period between 1 February 2016 and 31 January 2018 exceeds their lending benchmarks will benefit from a rate reduction. The TLTRO-II rate can be as low as −40 basis points.[37]

The TLTROs have eased bank funding conditions, ensuring that the monetary policy stimulus reaches euro area households and firms. The TLTROs reduced the marginal funding costs of banks that participated in the operations and, in

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35 TLTRO-I was part of the credit easing package of measures which also included cuts in policy rates (bringing the deposit facility rate into negative territory for the first time) and the announcement of the intensification of work towards outright purchases of asset-backed securities. In addition, the use of the fixed rate tender procedure with full allotment in main refinancing operations was prolonged and the weekly fine-tuning operations to sterilise the liquidity injected under the Securities Markets Programme were suspended.

36 For more details on TLTRO-II, see the box entitled "The second series of targeted longer-term refinancing operations (TLTRO II)", *Economic Bulletin*, Issue 3, ECB, 2016. There is a dedicated reporting scheme for TLTRO-II to track the net lending of participating banks. Its methodology is aligned with the methodology underpinning the MFI balance sheet statistics.

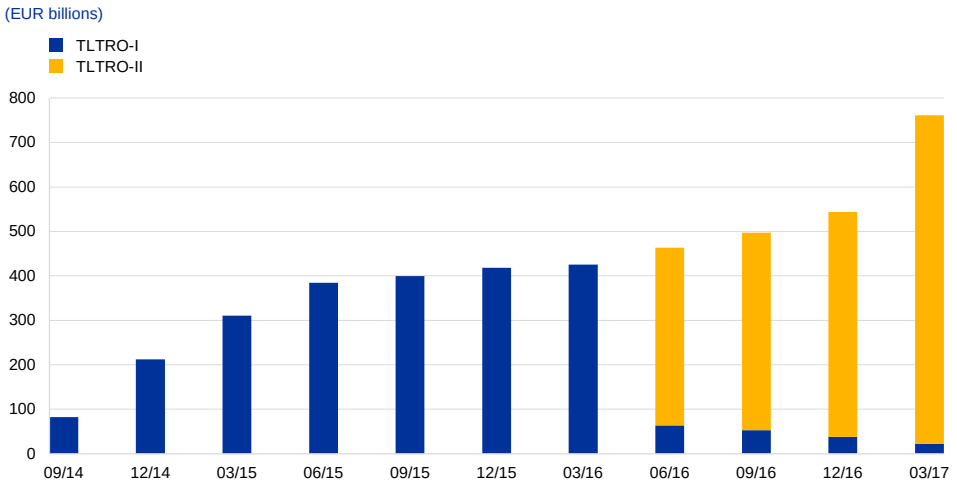
37 Counterparties will qualify for this rate (the deposit facility rate prevailing at the time of allotment for each TLTRO-II operation) if their outstanding amounts of eligible loans (subject to certain adjustments, for example for loan sales and purchases and for securitisation) exceeds their benchmark stocks of eligible loans by 2.5% or more as at 31 January 2018. For amounts below this limit, the level of the interest rate will be determined on the basis of the percentage by which a counterparty exceeds its benchmark stock and will follow a linear graduation.

parallel, provided them with incentives to increase their supply of targeted credit. The design of the measure thereby ensured that the reduction in funding costs that banks benefit from is passed on to borrowers. Moreover, to the extent that market-based funding has been replaced with TLTRO funding, the measure has contributed to a reduction in the supply of bank bonds. All other things being equal, a decline in bank bond issuance generally reduces banks' bond market funding costs, further easing funding conditions both for banks that bid in the TLTRO operations and for those that did not. The resulting more favourable credit conditions for borrowers (when the reduction in funding costs is passed on) in turn encourage borrowing and expenditure for investment and consumption.

Banks' total TLTRO-II borrowings currently stand at €739 billion. The first TLTRO-II operation (TLTRO-II.1, settled in June 2016) attracted bids amounting to €399 billion, which largely reflected shifts out of TLTRO-I funding and into TLTRO-II funding (see Chart A). The second and third TLTRO-II operations (TLTRO-II.2 and TLTRO-II.3) allotted €45 billion and €62 billion respectively. Take-up in the final operation (TLTRO-II.4) was substantially higher at €233 billion, of which a significant share (€216 billion) constituted a net increase in TLTRO borrowings. The significant take-up in the final operation reflects the overall attractive pricing of TLTRO-II compared with banks' alternative market-based funding, and, to some degree, incentives for back-loading take-up.[38] Overall, outstanding TLTRO credit (including outstanding TLTRO-I credit) stood at €761 billion as at end-March 2017 and was concentrated in the first and final TLTRO-II operations (see Charts A and B).

Chart A

Evolution of banks' gross TLTRO borrowings

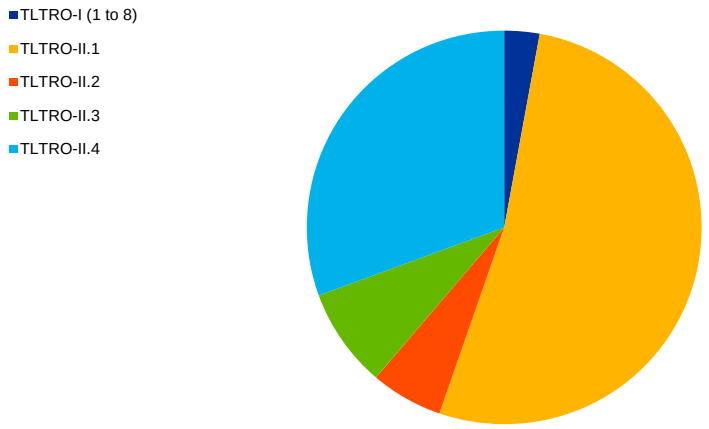


Source: ECB.

[38] Such incentives to postpone take-up arose for several reasons. First, market participants were expecting further cuts in policy rates at the time of bidding for TLTRO-II.1 and TLTRO-II.2. Postponing take-up may have been preferable at that point in time in order to lock-in the lowest possible rate. Moreover, back-loading take-up extends the tenor of the operation, over which market rates are likely to rise. Finally, it reduces the uncertainty surrounding the final TLTRO-II rate, as banks had observed developments in their eligible loans for half of the reference period by the time they came to bid for TLTRO-II.4 funding. This information allowed them to make a more accurate assessment of whether and by how much they were likely to outperform their lending benchmarks.

Chart B

Composition of outstanding TLTRO credit as at end-March 2017



Source: ECB.

The joint impact of TLTRO-I and TLTRO-II on bank intermediation cannot be easily split into the separate contributions of the two series at present. While high bidding volumes are welcome, they do not constitute the right metric for assessing the effectiveness of the two TLTRO series. The measure of success is rather the improvement in funding conditions of final borrowers brought about by the TLTROs. Given the large set of banks that bid in both series, the significant rollover of TLTRO-I funding into TLTRO-II funding and the relatively short period since the settlement of the first TLTRO-II operation for which bank lending data are available, it is currently difficult to split the overall impact of the TLTROs into the contribution of TLTRO-I and the additional impact of TLTRO-II. Instead, evidence of their joint impact on bank intermediation is provided below.

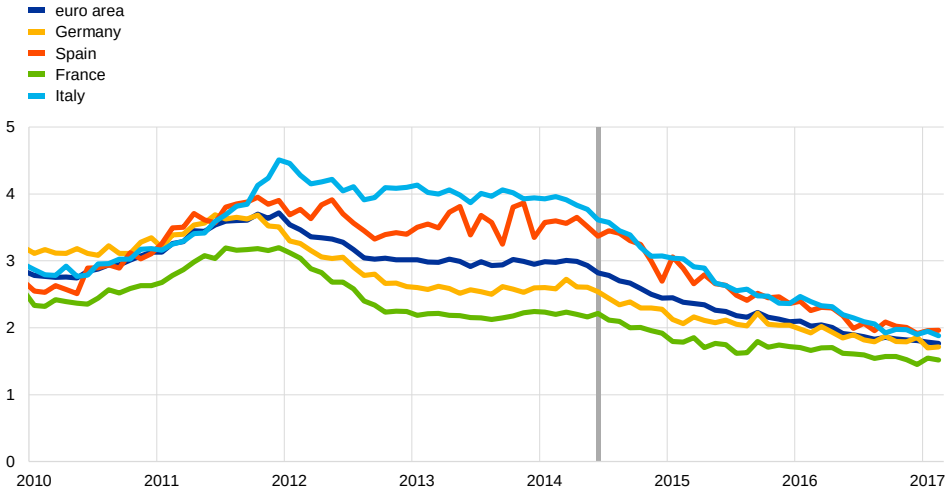
The TLTROs, together with the other non-standard measures introduced since June 2014, have proven effective in supporting the transmission of lower policy rates into better borrowing conditions for the euro area non-financial private sector. The rates on loans to non-financial corporations declined markedly immediately after the announcement of the first series of TLTROs (see Chart C). The declines were sharper in countries where the composite lending rates to non-financial corporations had been elevated, thus, overall, the cross-country dispersion of lending rates also declined in parallel. Moreover, in vulnerable countries, banks that borrowed under TLTRO-I reduced their rates by more than banks that abstained from bidding.[39] Finally, banks surveyed in the euro area bank lending survey have repeatedly reported that the TLTROs – including those of the second series – have contributed to an easing of the terms and conditions on loans to enterprises and, albeit to a lesser extent, an easing of credit standards (see Chart D).

[39] See the article entitled "The transmission of the ECB's recent non-standard monetary policy measures", *Economic Bulletin*, Issue 7, ECB, 2015.

Chart C

Composite lending rates for non-financial corporations

(percentages per annum)

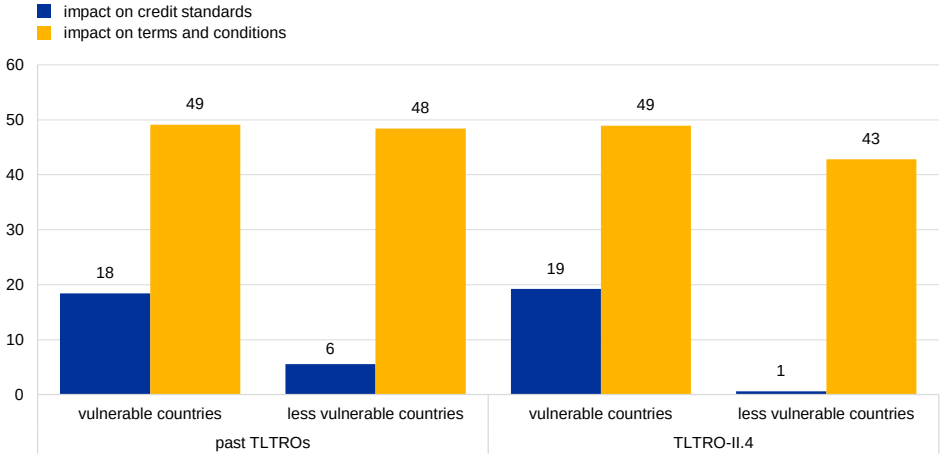


Source: ECB.
Notes: The vertical line denotes the announcement of the credit easing package of measures (which included TLTRO-I) in June 2014. The latest observation is for February 2017.

Chart D

Easing impact of past TLTROs and the expected easing impact of TLTRO-II.4 on credit standards and terms and conditions on loans to enterprises

(percentages of survey respondents indicating that the TLTROs contributed considerably and contributed somewhat to an easing of credit standards and terms and conditions in the January 2017 euro area bank lending survey)



Source: January 2017 euro area bank lending survey.
Notes: The survey responses refer to the impact of all past TLTROs and the impact of TLTRO-II.4 on bank lending conditions. Vulnerable countries are Ireland, Greece, Spain, Italy, Cyprus, Portugal and Slovenia. Less vulnerable countries are the remaining euro area countries.

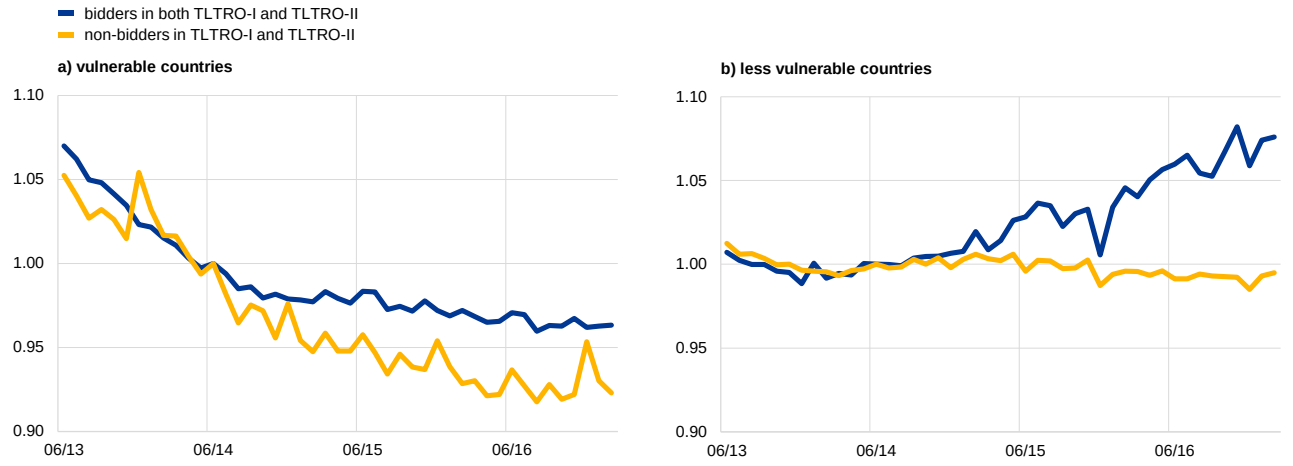
The TLTROs seem to be supporting higher intermediation volumes in less vulnerable euro area countries and a slowdown of the contraction in bank lending in vulnerable countries. Chart E compares the evolution of lending to non-financial corporations by the set of banks that bid in both TLTRO-I and TLTRO-II with lending by banks that did not participate in any operations in the two series of TLTROs. Prior to the introduction of TLTRO-I net lending by both groups of banks evolved largely in parallel. Lending by banks that did not participate in the TLTROs

appears to have remained largely unchanged subsequently. In vulnerable countries, they have continued to shed loans at a relatively stable pace and there has been only a very gradual slowdown in the contraction in lending by this group of banks. By contrast, banks that bid in both series of TLTROs have significantly reduced the pace at which they had been cutting lending to non-financial corporations. In less vulnerable countries, bidders appear to have increased intermediation volumes.

Chart E

Lending to non-financial corporations by TLTRO bidders and non-bidders

(index: June 2014 = 1)



Source: ECB.
Notes: The chart shows the evolution of a notional stock of loans to non-financial corporations based on a sample of MFIs for which information is available at the individual MFI level. The notional stock is constructed by adding the cumulated net flows of loans to non-financial corporations over the relevant period to the stock of loans to non-financial corporations as at June 2013. The chart depicts the aggregate evolution of lending by the group of banks that borrowed under both TLTRO-I and TLTRO-II and lending by the group of banks which did not access any operations in the two series. Vulnerable countries are Ireland, Greece, Spain, Italy, Cyprus, Portugal and Slovenia. Less vulnerable countries are all other countries of the euro area. The group of bidders in vulnerable countries comprises 48 counterparties and the group of non-bidders comprises 35. In less vulnerable countries, the group of bidders comprises 43 counterparties, while the group of non-bidders comprises 91. The data are not seasonally adjusted and therefore exhibit at times strong end-of-year effects. The latest observation is for February 2017.

The full impact of the TLTROs is still unfolding. While the pass-through of the first TLTRO series into improved bank lending conditions is already advanced, the full impact of TLTRO-II is still to materialise, as the concomitant funding cost benefit for banks is only gradually being passed on to borrowers in the form of better terms and conditions and less stringent credit standards on new bank loans. It is also worth recalling that the take-up in TLTRO-II.1 was by and large driven by shifts out of TLTRO-I funding. Significant take-up net of redemptions of TLTRO-I funding occurred only in TLTRO-II.4. The impact of this final operation is yet to materialise.

Articles

1 The slowdown in euro area productivity in a global context

Higher labour productivity growth is a key factor in raising living standards in advanced economies. However, labour productivity growth in the euro area has long been low, even before the recent global slowdown. Against such a backdrop, this article assesses the slowdown in euro area productivity growth from a wide range of theoretical perspectives used to explain the global deceleration. These include the role of changes in sectoral composition of the economy, the impact of the global financial crisis, the possibility of measurement errors, a deceleration in the rate of technological progress and diffusion, declines in business dynamism, and the misallocation of factors of production. The article also considers more specific local factors which may account for the longer-lasting productivity weaknesses in the euro area, and argues that structural reforms are necessary to counter the area's long-standing productivity deficit with the United States.

1 Introduction

Higher labour productivity growth is a key factor in raising living standards in advanced economies. This is particularly the case in the euro area, in view of the rapid increase projected in the age of the workforce. Recent research suggests that while demographic effects have so far had only a modest impact on euro area productivity growth, rates of workforce ageing over coming decades are projected to increase, equivalent to forgoing around one-quarter of projected productivity growth over the 2014-35 horizon.[40]

Recent labour productivity growth in the euro area has, however, been low – by both historical and international standards – albeit against the backdrop of a generalised slowdown in global labour productivity growth. Given this broader deceleration, considerable debate remains as to the underlying causes. Some argue that the slowdown reflects factors which are mainly cyclical, related to the impact of the global financial crisis, while others emphasise longer-standing structural drivers such as changes in the sectoral composition of the economy, measurement errors, a deceleration in the rate of technological progress and diffusion, or declines in business dynamism and misallocation of factors of production.

[40] See Aiyar, S., Ebeke, C. and Shao, X., "The impact of workforce aging on euro area productivity", IMF Country Report No 16/220, July 2016.

This article assesses the post-crisis[41] slowdown in euro area productivity growth from a global perspective. Section 2 presents a number of stylised facts concerning the recent slowdown in euro area productivity growth. Section 3 provides a growth accounting decomposition, showing that the slowdown in euro area labour productivity growth can be traced – at least since the global financial crisis – to reductions in the rates of both capital deepening and total factor productivity (TFP) growth. Section 4 assesses the ability of current explanations emerging in the wider literature to explain the global productivity slowdown, while Section 5 considers area-specific reasons behind the ongoing productivity deficit with the United States. The box considers the contribution of structural reforms to productivity growth and assesses the potential role of the recently created national productivity boards. Section 6 concludes.

2 Some stylised facts on euro area productivity growth

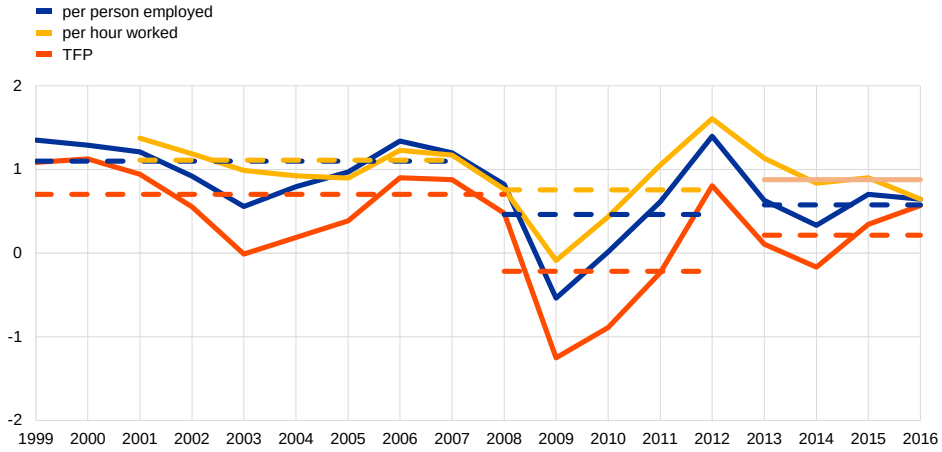
Regardless of the metric chosen to measure productivity, euro area labour productivity growth has slowed markedly since the onset of the global economic and financial crisis (see Chart 1). Over the period 2008-16, annual growth in euro area labour productivity per person employed slowed to an average of around 0.5% (based on a three-year moving average), from an average of around 1.1% over the course of the decade to 2007. If we consider only the post-crisis period of recovery from 2013 to 2016, euro area labour productivity growth averaged just 0.6% per year. Moreover, the slowdown is evident – albeit to varying degrees – regardless of whether productivity is measured as output per person employed, as output per hour worked, or in terms of TFP.

[41] Throughout this article the "pre-crisis period" ends in 2007 and references to the "crisis period", without additional qualification, relate to the euro area crisis which runs from 2008 to 2012, encompassing the two euro area recessions and the intervening period. The terms "post-crisis period" and "recovery" refer to the period from 2013 onwards (as far as the relevant available data permit). References to the "Great Recession" and the "global financial crisis" are to the synchronised global recession of 2008-09.

Chart 1

Euro area productivity growth

(annual percentage changes, three-year moving averages; dashed lines: period averages for pre-crisis (1999 to 2007), crisis (2008-12) and post-crisis (2013-16) intervals)



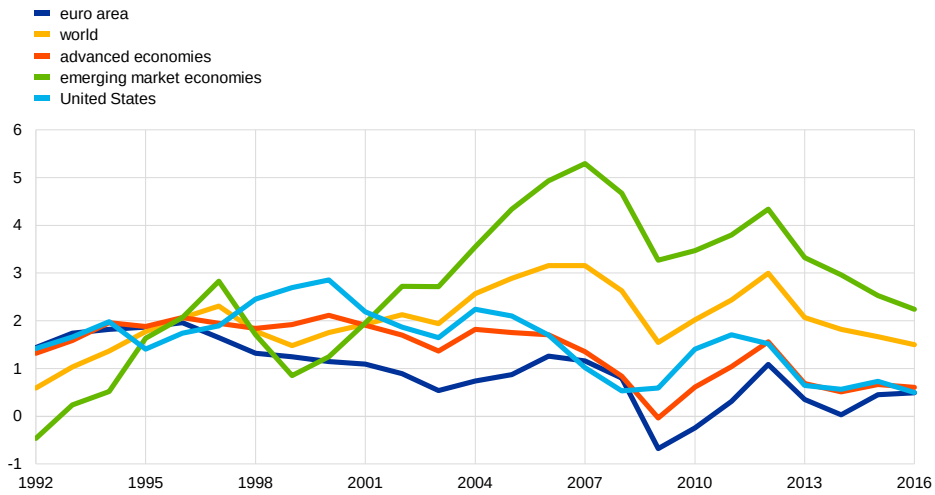
Sources: Eurostat, the European Commission's AMECO database and ECB staff calculations.
Note: TFP is computed from estimates of output per person employed (taken from the European Commission's AMECO database, which includes an estimate for 2016 on the basis of the European Commission's Winter Forecast 2016).

Recent euro area labour productivity growth has been low, both by historical and international standards. Chart 2 shows that the marked slowdown seen in euro area labour productivity growth since the crisis reflects a wider generalised trend across advanced (and emerging) economies since the Great Recession of 2008-09. Nevertheless, from the early 1990s to the present, the euro area has gone from being one of the regions of fastest-growing labour productivity, to one of the slowest.

Chart 2

Labour productivity growth in the euro area, the world and global regions

(annual percentage changes, three-year moving averages)



Sources: The Conference Board and ECB staff calculations.
Note: Labour productivity is defined as output per person employed.

The decline in euro area labour productivity growth is widespread at the sector level, reflecting a marked slowdown in within-sector rates, rather than a shift in industrial structure towards sectors with low labour productivity. The secular trend towards services as an ever-greater proportion of the total economy might be expected to result in a reduction in aggregate labour productivity growth, as productivity growth in these sectors is typically lower than in other (mainly industrial) sectors. However, a shift-share analysis shows that the decline in aggregate labour productivity growth at the euro area level owes rather more to a marked slowing of within-sector rates of labour productivity growth than to compositional effects. Using the standard ten-sector national accounts breakdown of economic activities (NACE A10[42]), Table 1 decomposes the 0.71 percentage point decline in average annual labour productivity growth between the pre-crisis period 1996-2007 and the period 2008-16 into (i) the share due to a slowing of within-sector rates of labour productivity growth (holding employment shares constant at 2007 levels); (ii) the decline due to the effects of a changing employment composition (holding sectoral labour productivity growth at pre-crisis averages); and (iii) the cross effect, whereby aggregate labour productivity growth is typically boosted by faster employment growth in high labour productivity growth sectors.[43] The table shows that since the onset of the crisis, within-sector rates of labour productivity growth have fallen considerably, while sectoral employment shifts have slightly supported aggregate labour productivity growth, as the labour adjustment which occurred over the crisis was concentrated in sectors with lower productivity. The predominance of the slowdown in within-sector rates of growth as the main driver of the aggregate deceleration also holds if the crisis period is excluded (i.e. when considering the 2013-16 period of recovery only).

Table 1

Decomposition of the slowdown in aggregate euro area labour productivity growth: 1996-2016

(annual percentage changes; percentage point contributions to changes)

	1996-2007	2008-2016	2013-2016
Overall labour productivity growth (period averages)	1.07	0.35	0.54
difference compared to 1996-2007 average		-0.71	-0.53
of which:			
within-sector effect		-0.90	-0.80
employment composition effect		0.15	0.22
cross effect		0.08	0.02

Sources: Eurostat and ECB staff calculations.
Notes: Based on a shift-share analysis using the NACE A10 sector breakdown. Published starting dates use the previous year as the base year for growth calculations.

42 As defined in *Nomenclature statistique des activités économiques dans la Communauté européenne* (Statistical classification of economic activities in the European Community (NACE)).

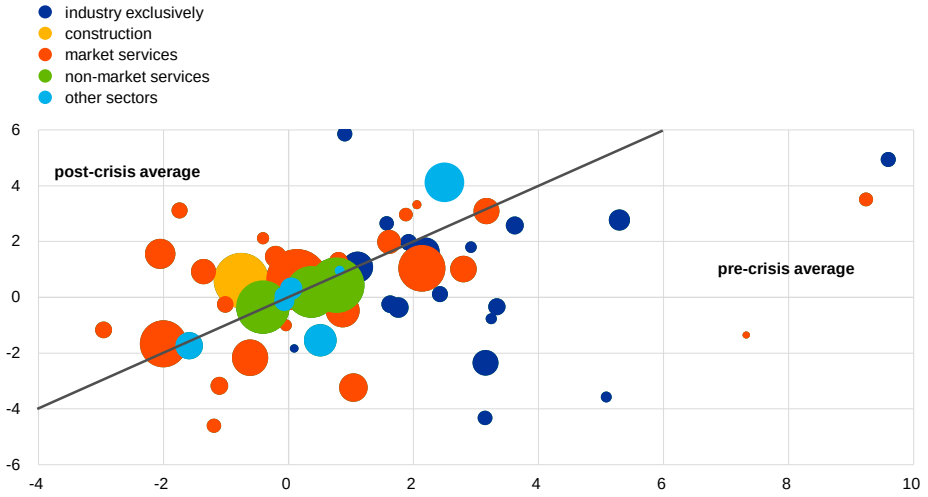
43 The analysis builds on work of Antipa, P., "Productivity decomposition and sectoral dynamics", *Quarterly Selection of Articles: Banque de France Bulletin*, Banque de France, Spring 2008, pp. 51-64.

The pattern of weak labour productivity growth at the sectoral level can also be seen using a more detailed NACE 64-sector breakdown (available on an annual basis, currently ending in 2014). As shown in Chart 3, almost two-thirds of the 61 sectors for which data were available show falls (often significant) in average rates of labour productivity growth between the two periods (see the sectors to the right of the 45° line), particularly in the manufacturing sectors and the more traded market services (such as wholesale trade, financial and insurance services, legal and managerial services, and travel-related services).[44]

Chart 3

Pre- and post-crisis labour productivity growth by sector

(annual percentage changes (period averages); colours indicate the main NACE A10 sectoral groups; bubble sizes reflect the share of euro area employment for each sector in 2016; sectors on the 45° line are those in which pre- and post-2013 average growth rates are equal)



Sources: Eurostat and ECB staff calculations.
Notes: Labour productivity is defined as output per person employed. "Pre-crisis" refers to 2000-07; "post-crisis" to 2013-14 (in line with data availability). "Others" includes those attributed to "other services" (primarily private-sector acyclical sectors, such as arts, entertainment and recreation activities, household services and activities of extraterritorial organisations) and agriculture, forestry and fishing.

3 A growth accounting approach for the euro area and the United States

3.1 Decomposing labour productivity growth

Taking a growth accounting approach shows that the post-crisis decline in average growth in labour productivity in the euro area and the United States can be traced back to both a marked reduction in TFP growth in comparison with pre-crisis rates and, since 2013, a virtual absence of capital deepening. Using data from the European Commission's AMECO database, Chart 4 decomposes the rate of labour productivity growth for the two economies into drivers

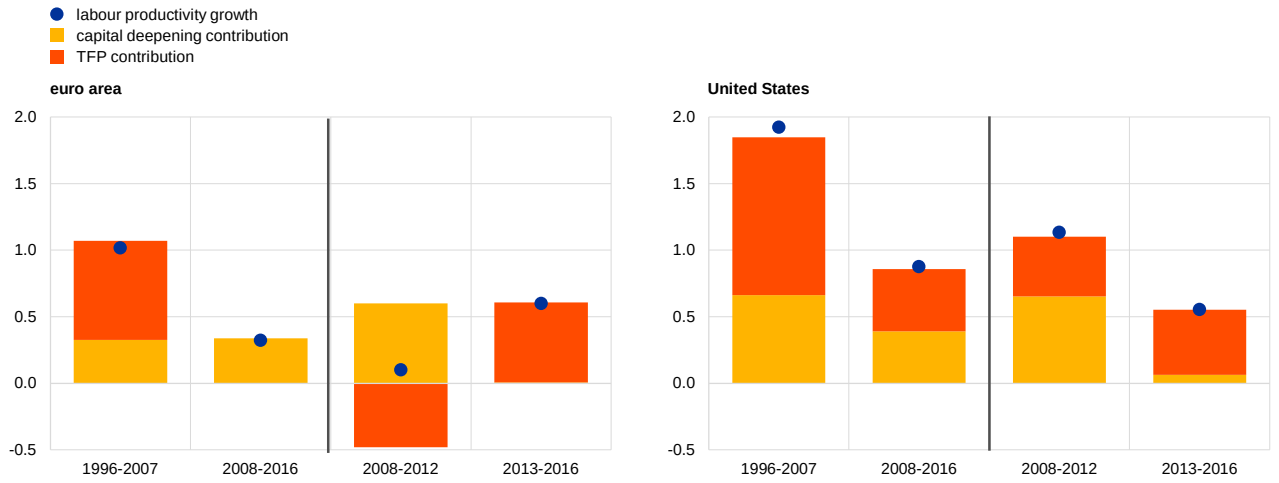
[44] Results are similar when productivity is measured on an hourly basis, although the picture is less comprehensive, owing to the number of sectors for which data are available (only 22 out of 64).

of capital deepening (i.e. the rate at which the capital-labour ratio is increased) and of TFP (reflecting underlying productivity growth from greater efficiencies in production processes and technological progress), for the pre-crisis period 1996-2007 and for the period 2008-16, since the onset of the global financial crisis. A comparison between developments in both economies in the periods before and after the onset of the Great Recession in 2008 shows, overall, (see the first two columns for each economy in Chart 4) that the marked decline in labour productivity growth looks to be driven by a sharp reduction in the underlying rate of TFP growth in both economies. Over the 2008-16 period as a whole, capital deepening did not decline in the euro area and suffered only a moderate decline in the United States; this was largely as a result of significant shedding of labour during the depths of the crisis period (in particular during the period 2008-09).

Chart 4

Labour productivity growth and decomposition for the euro area and the United States

(period averages of annual percentage changes and percentage point contributions*)



Sources: The European Commission's AMECO database and ECB staff calculations.
Notes: Productivity is measured in terms of output per person employed; * contributions are computed using a Cobb-Douglas production function, with capital deepening contributions estimated using two-period average factor shares; TFP contribution is taken as the residual. Observations for 2016 are estimates based on the European Commission's Winter 2016 Economic Forecast.

However, over the period 2013-16, capital deepening virtually stagnated in the euro area and the United States. Although it is of interest to compare the periods before and after the onset of the global financial crisis, it is worth noting that the latter period can be divided into two distinct sub-periods. The first of these periods (2008-12 inclusive) was marked by strong declines in real GDP in both economies (albeit these declines did not last as long in the United States as in the euro area, where they spanned both the Great Recession and the sovereign debt crisis). The second period covers the recovery, which began in 2013. Decomposing the interval since the onset of the crisis into these two sub-periods confirms the broad slowdown in TFP growth in the post-crisis period compared with pre-crisis averages (see the first and final columns for each economy in Chart 4), and suggests an almost complete absence of capital deepening in the aftermath of the crisis in both economies over the 2013-16 interval.

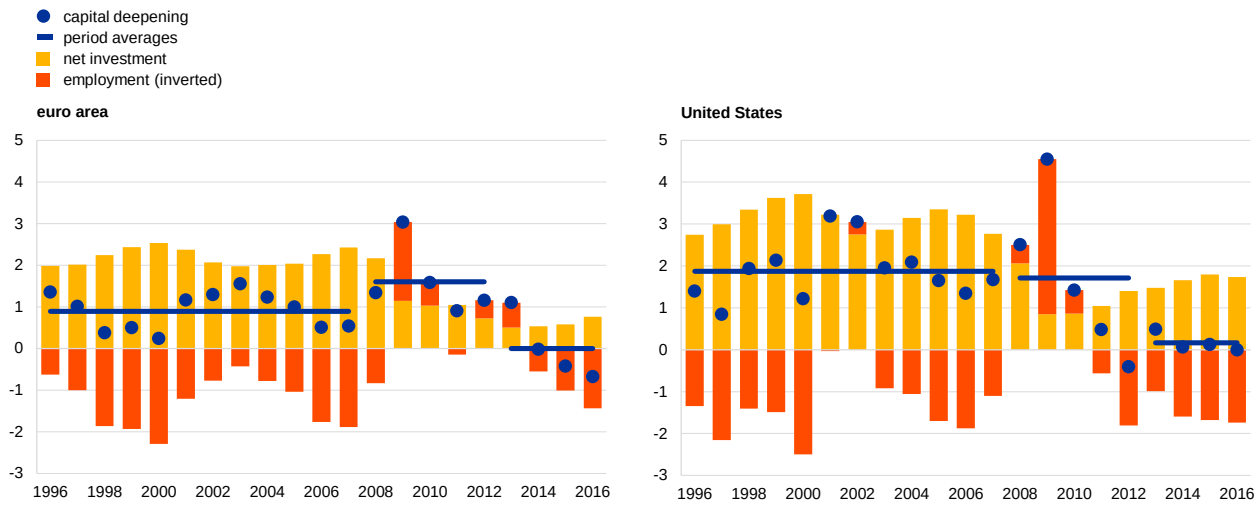
3.2 Factors behind the post-crisis slowdown in capital deepening

Capital deepening refers to the process of increasing the capital-labour ratio by giving labour more capital to work with. However, the capital-labour ratio may also indicate "artificial" capital deepening in periods of low net investment if significant shedding of labour mechanically increases the ratio of the existing net capital stock to a reduced workforce. Chart 5 shows that during the depths of the crisis, both economies saw some support to capital deepening – and, indeed, a slight increase in the rate of capital deepening in the euro area – mainly as a result of heavy shedding of labour in some countries and sectors (which mechanically supported capital deepening, notwithstanding markedly reduced net investment[45]).

Chart 5

Capital deepening in the euro area and the United States

(annual percentage changes)



Sources: The European Commission's AMECO database and ECB staff calculations.
Notes: Observations for 2016 are estimates based on the European Commission's Winter 2016 Economic Forecast. Period averages correspond to 1996-2007, 2008-12, and 2013-16, respectively.

The slowdown in capital deepening since 2013 reflects both a slower rate of net investment and a recovery in employment growth. Net investment has almost halved in the United States from pre-crisis rates, to around 1.7% per year over the 2013-16 period, but has fallen much more in the euro area (and from a lower starting rate) to just 0.6% per year – which is around one-quarter of the euro area's pre-crisis average annual rate of net investment.[46] However, the decline in capital deepening in both economies since 2013 also reflects a marked offsetting effect arising from growth in employment, which has been relatively strong in relation to the extent of the rebound in activity. This effect has contained the rate of capital deepening and, in fact, fully offset the low (albeit now modestly expanding) rate of investment growth in the euro area.

[45] Net of depreciation and of any accounting for obsolescence of existing capital.

[46] See also the article entitled "Business investment developments in the euro area since the crisis", *Economic Bulletin*, Issue 7, ECB, 2016. The article includes a box on the implications for capital deepening.

A number of reasons have been put forward to explain the slowdown in capital deepening since 2013. These include (i) the strong concentration of the recovery in consumer-driven sectors (common to both economies) where growth is heavily concentrated in those services that are often the most labour-intensive[47] and in which the potential for capital-labour substitution remains somewhat limited, coupled with a persisting weakness in investment in construction (particularly in the euro area); (ii) the impact of the global financial crisis and ongoing credit constraints in its aftermath (discussed in Section 4.1, below); and (iii) some further potential for offset to the "artificial" degree of capital deepening seen over the depths of the crisis. All three of these elements are likely to help explain the lower rates of capital deepening seen in both the United States and euro area economies over the period of recovery.

3.3 A broader trend decline in TFP growth

Considered over the longer term, and from a more global perspective, it is the slowdown in TFP growth which seems to have been the key contributor to the slowdown in labour productivity growth since the mid-1990s (see Chart 6). While estimates vary as to the magnitudes of pre- and post-crisis rates of TFP growth seen in each of the euro area and the United States (due mainly to differences in methodology[48]), a consistent finding is that TFP growth in both has decelerated significantly since the crisis. Including estimates for 17 other advanced economies (see the shaded area in Chart 6), it becomes clear that a generalised decline in average rates of TFP growth is broadly detectable across advanced economies for the period since the mid-1990s (albeit with a modest rebound from the negative rates of growth seen in the euro area during the depths of the global financial crisis). Euro area TFP performance had been lacklustre, in comparison with most advanced economies, since the mid-1990s.

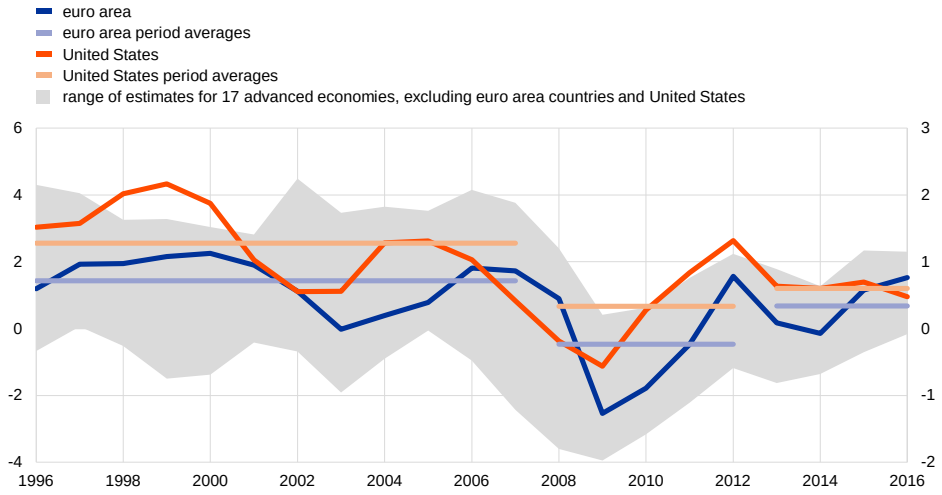
47 Such as retailing, healthcare and other non-market services, and the professional and administrative services sectors. See also the article entitled "What is behind the recent rebound in euro area employment?" *Economic Bulletin*, Issue 8, ECB, 2015.

48 Estimates vary due primarily to differences in the specification of the production function underlying growth accounting decompositions. Nevertheless, a common feature of (i) the various estimates available for both the euro area and the United States (principally from the AMECO database and The Conference Board, respectively), and (ii) the country-level estimates from other international organisations such as the IMF and the OECD, is that they typically suggest a marked decline in post-crisis TFP growth rates compared with pre-crisis rates.

Chart 6

Total factor productivity (TFP) growth in advanced economies

(three-year moving averages of annual percentage changes; right-hand scale: euro area and United States; left-hand scale: other advanced economies)



Sources: The European Commission's AMECO database and ECB staff calculations.
Notes: The shaded area shows the range of estimates for 17 advanced economies (excluding euro area countries and the United States): Australia, Bulgaria, Canada, Croatia, Czech Republic, Denmark, Hungary, Iceland, Japan, Mexico, New Zealand, Norway, Poland, Romania, Sweden, Switzerland and the United Kingdom. Period averages are computed for 1996-2007, 2008-12, and 2013-16, respectively.

4 Causes of the productivity slowdown: contrasting views

A range of competing explanations has been put forward in the literature to explain the secular decline over recent years in headline productivity growth generally, and in TFP growth in particular. This section assesses the potential of each of these factors in helping to explain the euro area's recent slowdown in productivity growth in the context of the wider global deceleration.

4.1 The impact of the crisis on euro area productivity growth

The global financial crisis which began in 2008 is likely to have contributed to the slower average rate of euro area productivity growth since the crisis. Several mechanisms are typically associated with slower productivity growth following financial boom-bust cycles. First, the reallocation of resources previously associated with the build-up of housing imbalances in some euro area economies prior to the onset of the Great Recession may be hindered by ongoing credit supply constraints in a slow-to-recover financial system.[49] These constraints are likely to limit the expansion of small and young, but highly productive, firms. Second, regulatory forbearance and inadequate insolvency regimes may also lock capital into

[49] See Borio, C., Kharroubi, E., Upper, C. and Zampolli, F., "Labour reallocation and productivity dynamics: financial causes, real consequences", *BIS Working Papers*, No 534, January 2016; and Reinhart, C. and Rogoff, K., *This Time is Different: Eight Centuries of Financial Folly,* Princeton University Press, 2009.

firms with low levels of productivity, so that the cleansing effects typically associated with recessions do not occur. Lastly, risks of hysteresis, associated with protracted periods of private sector balance sheet repair, may weaken domestic demand and investment, thereby potentially limiting technological innovation.[50]

Significant though the crisis may have been in further reducing euro area productivity growth in the period since 2008, it does not, however, shed light on the more fundamental issue; why euro area productivity growth was comparatively slow (from an international perspective) before then. This can be explained by an examination of the underlying determinants of labour productivity growth; these are explored in detail below.

4.2 Measurement errors in outputs and inputs

It is often suggested that mismeasurement may simply underestimate the real rate of productivity growth now seen in advanced economies. A number of areas of concern regarding mismeasurement are discussed in the literature. These include the mismeasurement of information and communications technology (ICT)-related goods and services, arising from the difficulty in measuring improvements in the quality of ICT hardware and software – in the United States, in particular, measured hardware prices have recently shown falls which some see as implausibly small in comparison with historical data. The literature also identifies the lack of an encompassing measurement of intangible investments in the national accounts[51]; and considers the broader notion that many recent innovations are simply not marketed and therefore not captured in the national accounts, so that the growth in GDP, on which productivity dynamics are based, is significantly understated.

Notwithstanding the benefits of innovations associated with increasing numbers of free digital goods and the "sharing economy", market-based TFP growth has slowed considerably over several consecutive decades. As Robert Gordon notes, far-reaching welfare implications for consumers associated with earlier innovations – including the invention of electricity and the telephone – have been around since well before the ICT revolution.[52]

Potentially more relevant are the concerns regarding inadequate measurement of both intangible investments and improvements in the quality of ICT-related goods and services and of labour, which may bias estimates of outputs and inputs and result in misleading conclusions regarding labour productivity and TFP growth. Attempts to mitigate these deficiencies are ongoing and include (i) concerted efforts

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50 Recent work by staff at the IMF suggests that the crisis had a "significantly negative impact" on post-crisis euro area TFP growth. See "Gone with the headwinds: global productivity", IMF presentation, 2 February 2017. IMF Staff discussion note to be published March/April 2017. The IMF estimates that policy uncertainty alone is likely to have shaved around 0.1-0.2 percentage point annually from post-crisis TFP growth in advanced economies generally, with the impact in Europe being particularly pronounced.

51 See Corrado, C., Hulten, C. and Sichel, D., "Intangible Capital and Economic Growth", *NBER Working Paper Series,* No 11948, January 2006.

52 See Gordon, R., *The Rise and Fall of American Growth: The U.S. Standard of Living since the Civil War,* Princeton University Press, 2016.

aimed at creating better measures of "intangible assets" in national accounts data sources via the inclusion of "intellectual property products" in the European System of National and Regional Accounts (ESA 2010)[53]; (ii) attempts to reassess the development of ICT-based prices (and the wider link between ICT and productivity growth); and (iii) greater efforts to better isolate the impact of improvements in skills. However, given the internationally synchronised slowdown in TFP growth seen since the onset of the Great Recession across countries at varying levels of economic development and with differing economic structures and varying degrees of educational attainment, mismeasurement seems unlikely to be a major cause of either the slowdown in TFP growth which has been measured across economies, or the marked decline in euro area TFP growth observed since the onset of the crisis.

4.3 A decline in the rate of technical progress

A widely-held view suggests that the decline in aggregate productivity growth across advanced economies is likely due to a slowing in the rate of technological progress across sectors, with technological innovations of recent years simply less "revolutionary" than in the past.[54] As a result, it is argued, recent technological innovations may simply be less pervasive compared with earlier inventions such as the railway, electricity or the telephone, so that the impact on TFP growth is likely to be much lower.

In a similar vein, others explain the slowdown in US TFP growth since the early 2000s as a sign that the productivity-enhancing effect of ICT innovations has run its course – as suggested by the fact that the slowdown in US productivity growth is most pronounced in sectors in which ICT is produced or intensively used.[55] However, many counter that the full impact of the ICT revolution has not yet been realised and point to the potential yields from, for example, miniaturised products with embedded connectivity, artificial intelligence, robotics, self-driving cars, drones, 3D printing, cloud services and big data, arguing that substantial gains in aggregate productivity are likely to be seen only with a considerable lag[56]. Moreover, the argument that a slowdown in the pace of technological progress explains the marked deceleration in euro area TFP growth since the crisis seems somewhat unconvincing, not least because the euro area saw less of a boost to TFP growth from the ICT revolution than that seen in, for example, the United States.

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53 European System of National and Regional Accounts, which uses aggregation levels of the NACE Rev. 2 classification (2010).

54 Gordon, R., op. cit..

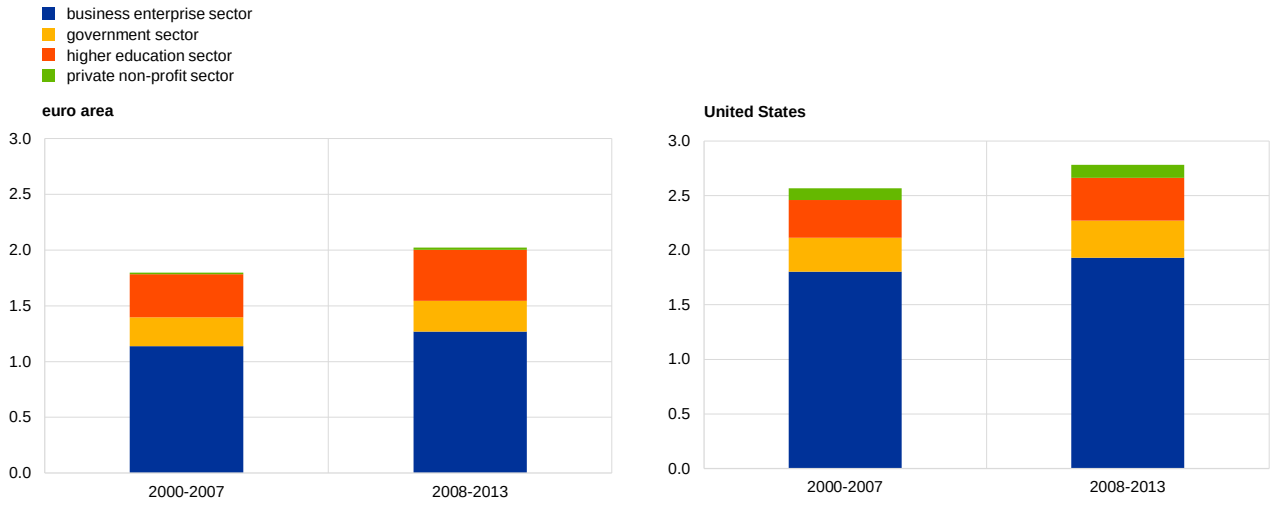
55 See Fernald, J., "Productivity and potential output before, during, and after the Great Recession", *Federal Reserve Bank of San Francisco Working Paper Series*, September 2012; and Cette, G., Fernald, J. and Mojon, B., "The pre-Great Recession slowdown in productivity" *Federal Reserve Bank of San Francisco Working Paper Series*, April 2016.

56 See, for example, Mokyr, J., "Is technological progress a thing of the past?", available at http://voxeu.org/article/technological-progress-thing-past; Nordhaus, W., "Productivity growth and the new economy," *NBER Working Paper Series,* No 8096, January 2001; Brynjolfsson, E. and McAfee, A., *Race Against the Machine: How the Digital Revolution is Accelerating Innovation, Driving Productivity, and Irreversibly Transforming Employment and the Economy*, Digital Frontier Press, Massachusetts, 2011; and Brynjolfsson, E. and McAfee, A., *The Second Machine Age: Work, Progress, and Prosperity in a time of Brilliant Technologies*, W. W. Norton & Company, New York, 2014.

Chart 7

R&D expenditure by sector in the euro area and the United States

(Expenditure on R&D as a percentage of GDP)



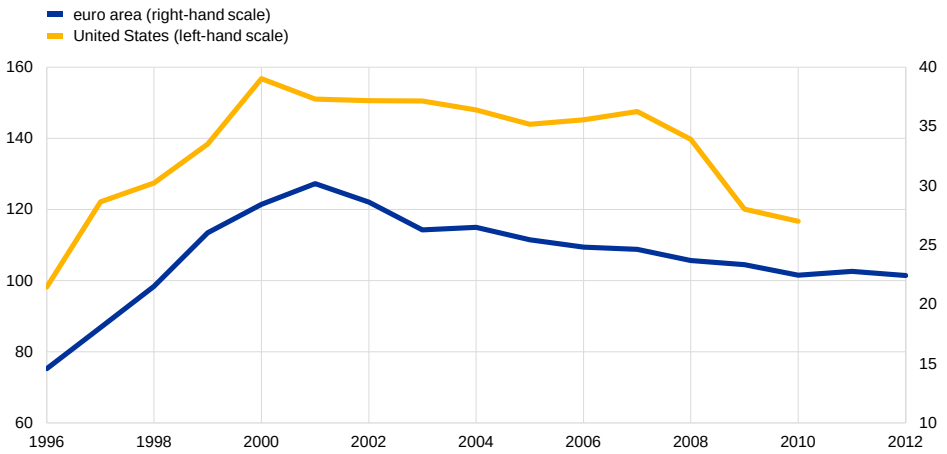
Sources: Eurostat and ECB staff calculations.
Note: Periods are limited by data availability.

More generally, the available evidence – in terms of research and development (R&D) expenditure and high technology patents – does not point to a sharp slowdown in global technological progress in recent years. As shown in Chart 7, R&D expenditure relative to GDP typically increased in both the euro area and the United States following the onset of the Great Recession (i.e. during the period 2008-13 (interval limited by data availability)), suggesting that there has not been a major decrease in the resources devoted to innovation. Similarly, while high-tech patent applications submitted and granted have declined somewhat from their respective peaks in the early 2000s, they remain high by historical standards (see Chart 8). However, in explaining the euro area's longer-term "productivity deficit" with the United States, the higher incidence of US high-tech patenting activity per inhabitant remains notable (as does a higher absolute number of patent applications to the European Patent Office by US enterprises in comparison with euro area-based firms).

Chart 8

High-tech patent applications/grants in the euro area and the United States

(patent submissions/grants per million inhabitants)



Sources: Eurostat and ECB calculations.
Note: US data show patents granted by the US Patent and Trademark Office (USPTO) to US companies, while euro area data show patent applications made to the European Patent Office (EPO) by euro area companies.

More anecdotally, there have been important technological advances in recent years which may still bring substantial gains in aggregate productivity, albeit with a lag. These advances are likely to enhance networking and cooperation, as well as to increase the accessibility of products and services and the speed at which they can be supplied.

4.4 A decline in the rate of technology diffusion and an increase in input misallocation

Potentially more important than any possible waning of innovation may be the fact that the pace of technology diffusion has declined, so that the latest inventions are not incorporated into the production processes of businesses as rapidly as in previous years. For technological innovations to have a noticeable impact on the TFP growth of businesses, corresponding changes in organisational structures and business models are often needed. One possible indicator of the extent of technology diffusion, as proposed by the OECD, is the gap between the labour productivity growth of global frontier firms – those creating the new knowledge – and non-frontier firms, also called "laggards", operating in the same sector.[57] According to this indicator, technology diffusion declined in the early 2000s in advanced OECD economies (when comparable cross-country firm-level data for Europe became available), as shown by the increasing gap in the labour productivity performance of frontier and non-frontier firms operating in the same sector (see Charts 9a and 9b).

The slowdown in technology diffusion has been particularly pronounced in services in the euro area, relative to other advanced economies. Using the

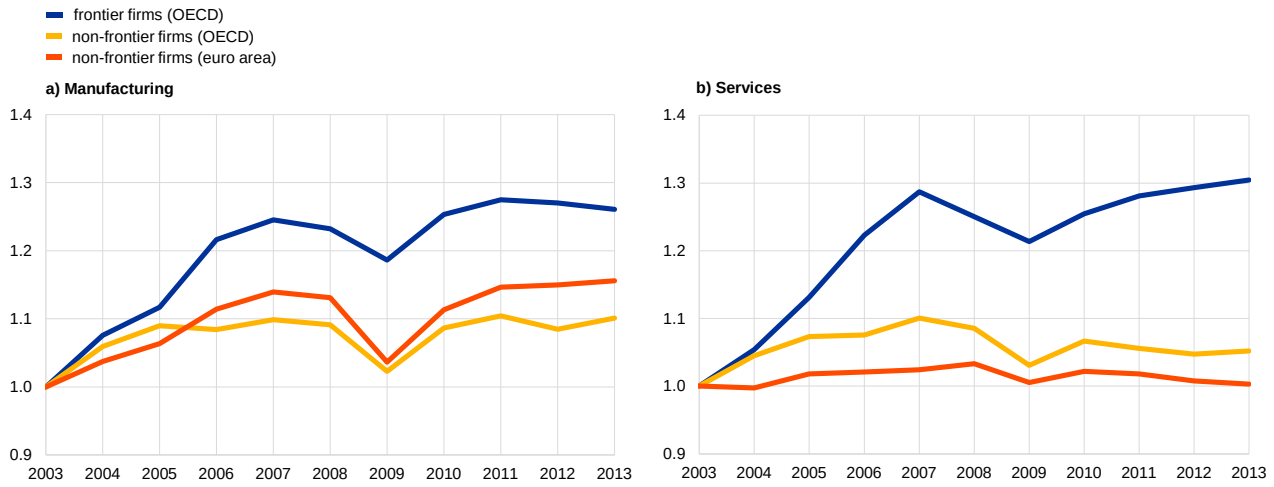
[57] See *The future of productivity*, OECD, 2015.

CompNet dataset[58] to analyse the labour productivity performance of firms in five large euro area countries (Belgium, Spain, France, Italy and Finland) and approximating the labour productivity growth of non-frontier firms using the performance of the median firm[59] in each sector, Charts 9a and 9b show that the gap in labour productivity between the frontier firms operating in the OECD and the non-frontier firms operating in euro area countries widened prior to the global financial crisis. Although evident in both manufacturing and services, technological diffusion looks to have been noticeably slower in euro area services than in services in other advanced economies. This productivity gap declined moderately during the crisis, possibly due to the exit from the market of the least productive non-frontier firms, but it appears to have widened again – at least as far as services are concerned.

Chart 9

Technology diffusion in manufacturing and services in selected euro area countries

(annual labour productivity growth of frontier and non-frontier firms; 2003 = 1)



Source: ECB staff calculations based on OECD data and the 5th vintage of CompNet data.
Notes: The OECD frontier and non-frontier productivity developments are taken from *The future of productivity*, OECD, 2015. The productivity growth of the euro area is proxied as the unweighted average, across Belgium, Spain, France, Italy and Finland, of the median firm in each 1-digit sector (using the NACE Rev. 2 classification). NACE Rev.2 1-digit services sectors are then aggregated with value added shares.

Three key explanations for these developments are (i) the increasing importance of so-called "tacit" learning-by-doing knowledge; (ii) a slowdown in the rate of laggard firms' investment in intangibles; and (iii) a decrease in business dynamism. While the factors behind the slowdown in technology diffusion are still not fully clear, various mutually consistent explanations have been put forward. The literature emphasises the increasing importance of investment by firms

58 The CompNet micro-aggregated dataset is based on administrative data from company registers and provides harmonised cross-country information on the main moments (e.g. mean, median, standard deviation) of the distribution of a number of variables related to firm performance and competitiveness for each sector. The data refer to firms with more than 20 employees and are population-weighted. For details, see Lopez-Garcia, P., di Mauro, F. and the CompNet Task Force, "Assessing European competitiveness: the new CompNet micro-based database", *Working Paper Series*, No 1764, ECB, 2015.

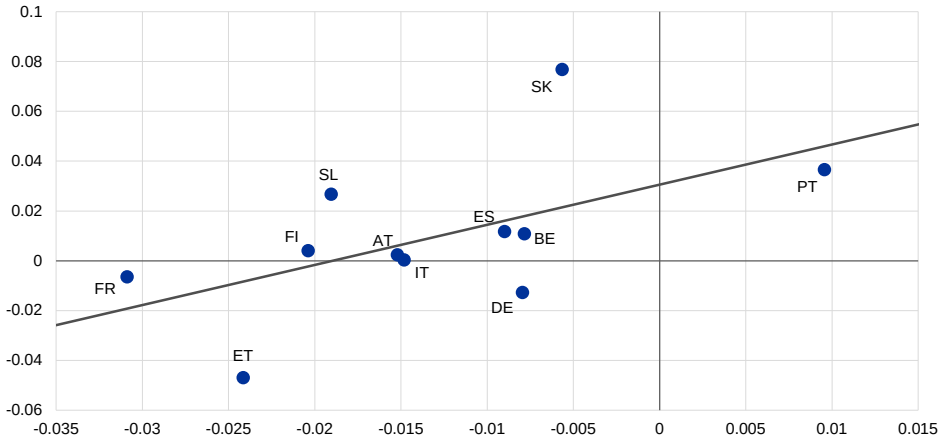
59 The median firm was chosen since its labour productivity dynamics very closely follow the weighted labour productivity growth average of firms that are not in the frontier in a given sector.

in human capital so as to enhance their absorptive capacity.[60] Furthermore, among non-frontier firms, investment in intangible assets (e.g. R&D activity, firm-specific skills and various forms of intellectual property), which is another crucial determinant of the absorptive capacity of firms, has not kept pace with technological innovation and is thus likely to have negatively affected technology diffusion.[61] Chart 10 shows that the labour productivity growth gap between frontier and non-frontier firms is larger where investments by laggards in intangibles are lower relative to investments by frontier firms (after controlling for NACE sector).

Chart 10

Technology absorption and investment in intangibles of non-frontier firms in 11 euro area countries

(x-axis: gap in intangibles between national frontier and laggard firms (annual average 2010-13); y-axis: gap in labour productivity growth (annual average 2010-13))



Source: ECB staff calculations based on Amadeus data.
Notes: The gap in labour productivity growth and investment in intangibles between frontier and non-frontier firms are computed at the NACE Rev.2 2-digit sector level. Country averages are obtained with weights based on the share of each sector in total value added. Investment in intangibles is measured as the ratio of real intangible fixed assets + depreciation over lagged real intangible fixed assets.

A further reason for the slowdown in technological diffusion may be related to a fall in business dynamism, or the extensiveness of "creative destruction". Given that young and high-growth firms can be key drivers of innovation – not least, by exerting pressure on incumbents to innovate and become more productive, and by speeding up labour reallocation – the literature finds a significant link between business entry rates and technological creation and diffusion.[62] While comparable cross-country data on business closures and openings are not available for the entire euro area, data for the EU-14 suggest a downward trend in the rate of business "churn" (i.e. the process of firms exiting the market and being replaced with

60 See, for example, Griffith, R., Redding, S. and Van Reenen, J., "Mapping the two faces of R&D: productivity growth in a panel of OECD industries", *The Review of Economics and Statistics*, Vol. 86, Issue 4, November 2004, pp. 883–95.

61 See, for example, Corrado, C., Haskel, J., Jona-Lasinio, C. and Iommi, M. "Intangible capital and growth in advanced economies: measurement methods and comparative results", available at http://www.intan-invest.net.

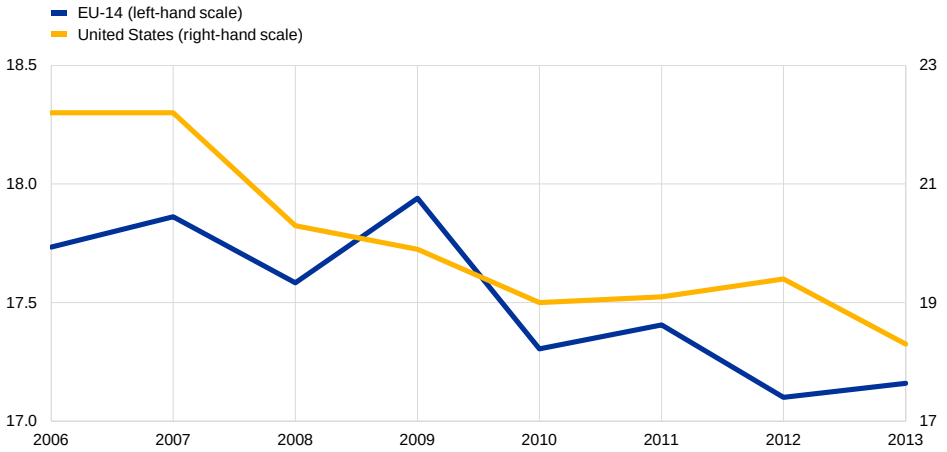
62 See, for example, Haltiwanger, J., Jarmin, R., Kulick, R. and Miranda, J., "High growth young firms: contribution to job, output and productivity growth", unpublished manuscript, 2016; and Baumann, U., and Vasardani, M., "The slowdown in US productivity – what explains it and will it persist?", *Bank of Greece Working Paper Series*, No 215, November 2016.

new firms); a similar decline has also been recorded in the United States (see Chart 11).

Chart 11

Business churn in the United States and Europe

(sum of the birth and death rates of firms)



Source: ECB staff calculations based on US Census Bureau and Eurostat data.
Notes: EU-14 denotes the countries that had joined the EU by 1995, with the exception of Greece (given the lack of data). 2006 is the earliest year with complete data for all EU-14 countries.

Business dynamism affects the allocation of capital and/or labour across firms and this can have a direct impact on within-sector labour productivity growth. A significant determinant of labour productivity growth is the degree of efficiency with which such production inputs are allocated across firms, even within narrowly defined sectors ("allocative efficiency").[63] Given the heterogeneity in the performance of firms, significant aggregate labour productivity gains can stem from the reallocation of resources (including labour and capital) from low- to high-productivity firms; research suggests that this may explain up to half of the aggregate labour productivity growth in a mature economy.[64] The most frequently used, albeit imperfect, indicator of capital and labour misallocation is the dispersion in the marginal revenue product of capital and labour across firms within a given sector.[65] The intuition underlying this measure is that for allocative efficiency to be achieved in a given sector where firms are assumed to face the same marginal costs, resources should flow across firms until the marginal productivity of inputs is equalised. However, the presence of frictions in labour, product and credit markets may hinder reallocation and can thus significantly dampen labour productivity dynamics. The larger the dispersion in the marginal revenue product of capital and labour, the greater the potential drag on aggregate labour productivity growth.

63 See the article entitled "Firm heterogeneity and competitiveness in the European Union", *Economic Bulletin*, Issue 2, ECB, 2017.

64 Estimates of the relative importance of these components of TFP growth are highly dependent on the country, sector, period and decomposition methodology used. The indicative percentages reported here are based on selected studies on the US manufacturing sector provided in Gamberoni, E., Giordano, C. and Lopez-Garcia, P., "Capital and labour (mis)allocation in the euro area: some stylized facts and determinants", *Working Paper Series*, No 1981, ECB, November 2016.

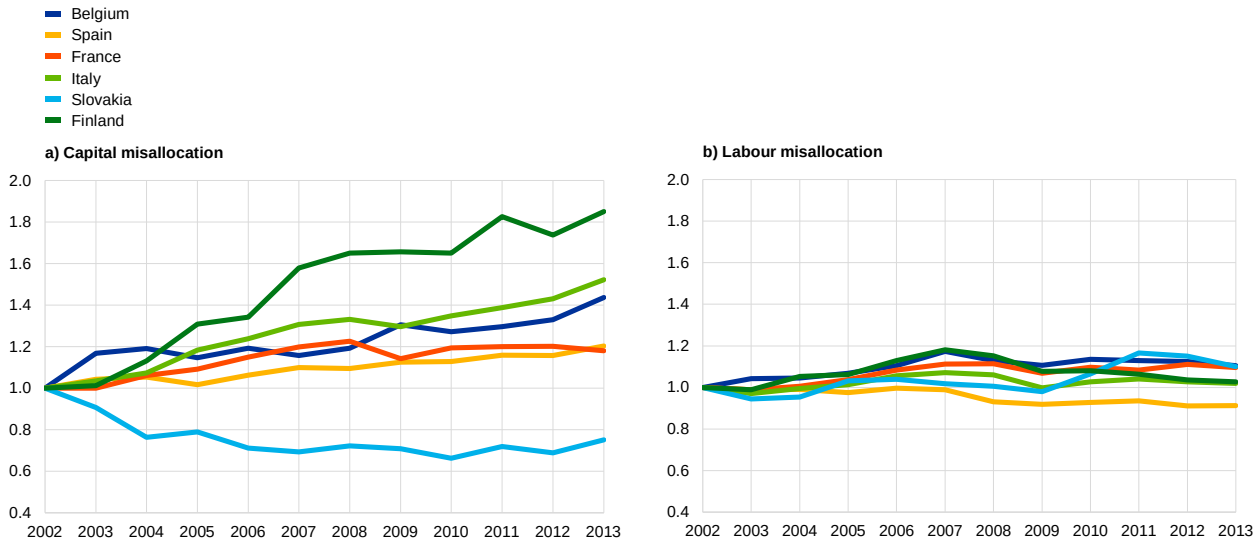
65 See Hsieh, C.-T. and Klenow, P.J., "Misallocation and manufacturing TFP in China and India", *The Quarterly Journal of Economics*, Vol. 124, Issue 4, November 2009, pp. 1403-48.

There is evidence in several euro area countries of rising inefficiency in the allocation of capital, compared with flatter dynamics for the misallocation of labour. Again using the cross-country, cross-sector CompNet data, capital misallocation appears to have been rising since the early 2000s in most euro area countries for which data are available (with the exception of Slovakia; see Chart 12a). Moreover, this upward trend has been mainly driven by the services sectors. Meanwhile, the increase in labour misallocation has been much less marked (see Chart 12b), with Spain even recording a slight decrease. Similar trends have been noted for capital and for labour in other mature economies, such as the United States and Japan.[66]

Chart 12

Developments in capital and labour misallocation in six euro area countries in the period 2002-13

(weighted averages of dispersion in the marginal revenue product across firms within a given sector; 2002 = 100)



Source: ECB staff calculations based on the 5th vintage of CompNet data.

5 Additional constraints in the euro area

Aside from the global factors considered above, there may be a number of additional European-specific factors, resulting from structural rigidities, which help to explain the long-standing labour productivity gap between the euro area and the United States. These may be connected with more highly regulated product, labour and financial markets, legal and regulatory obstacles to sectoral reallocation, or wider structural impediments such as a lower prevalence of ICT-relevant skills in the euro area. Similarly, there may be a tendency in the euro area towards a less wholesale approach to restructuring (in order to better exploit the full

66 For Japan, see Fujii, D. and Nozawa, Y., "Misallocation of capital during Japan's lost two decades", *DBJ Discussion Paper Series*, No 1304, June 2013. For the United States, see Hsieh, C.-T. and Klenow, P.J., op. cit. The latter study also shows that in emerging economies such as China and India, resource misallocation is comparatively much greater than in mature economies, but is set on a downward trend.

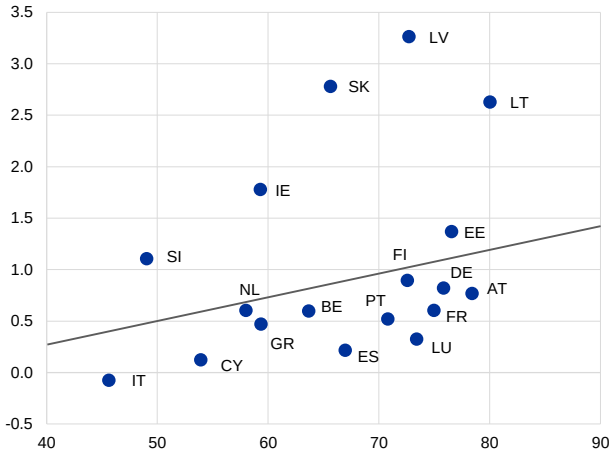
range of benefits from ICT investments). Recent research has also highlighted the role of managerial quality, given the need to reorganise production processes to adjust to new technologies.[67]

Highly regulated product and labour markets and "business unfriendly" framework conditions constitute a significant impediment to TFP growth. In many structural areas euro area countries are often very far from best practice. For example, on the basis of indicators related to the "ease of doing business" – undoubtedly, a major prerequisite for innovative and productive activity, – only one euro area country (Finland) features in the global top ten, while many are not even among the top 30.[68] Similarly, a simple correlation analysis shows that across the euro area countries, a higher TFP growth trend is typically associated with better contract enforcement mechanisms and fewer impediments to obtaining credit (Charts 13 and 14).

Chart 13

Relationship between trend TFP growth and contract enforcement

(x-axis: contract enforcement (annual average 2003-15); distance to frontier, where frontier = 100; y-axis: TFP growth (annual average 2000-15))

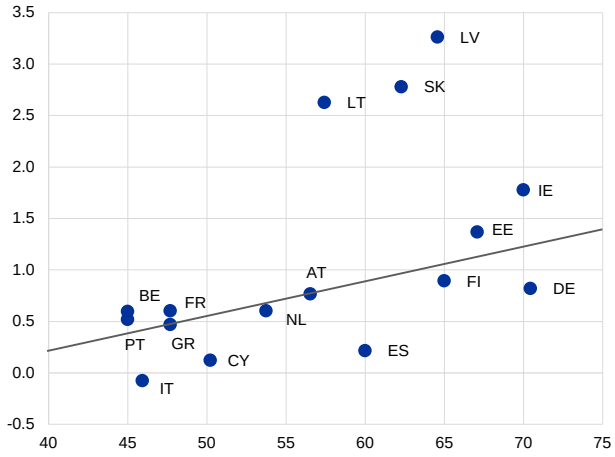


Sources: European Commission and World Bank data on enforcing contracts.

Chart 14

Relationship between trend TFP growth and getting credit

(x-axis: getting credit (annual average 2003-15); distance to frontier, where frontier = 100; y-axis: TFP growth (annual average 2000-15))



Sources: European Commission and World Bank data on getting credit.

Recent work by the OECD also highlights the adverse consequences of administrative and bureaucratic impediments which are manifested in an increase in the overall costs of debt workout (the process of repaying, restructuring or reshaping the profile of a debt), and in impediments to firm entry and exit, which are in turn an important determinant of cross-country differences in labour productivity (see Box). Improvements in areas such as regulatory quality, insolvency regimes, licencing, employment protection, public procurement rules and quality of public administration would be likely to spur labour productivity growth in the euro

67 See, for example, Garicano, L. and Heaton. P., "Information technology, organization, and productivity in the public sector: evidence from police departments", *Journal of Labor Economics*, Vol. 28, No 1, January 2010, pp. 167-201; and Bloom, N., Sadun, R. and Van Reenen, J. "Americans do IT better: US multinationals and the productivity miracle" *American Economic Review*, Vol. 102, No 1, February 2012, pp. 167-201.

68 See *Doing Business 2017: Equal Opportunity for All*, World Bank, 2017.

area by improving the allocation of resources across sectors and firms, and fostering innovation and its diffusion.

Box

The contribution of structural reforms to TFP growth and an assessment of the role of national productivity boards

Over the past decade a growing body of literature has sought to assess the impact of structural and institutional conditions on TFP growth. The seminal work of Aghion and Howitt[69] showed that non-frontier countries could gain from structural policies favouring cost-efficient adoption of existing technologies, while countries operating at the frontier would profit more from policies to promote innovation (e.g. investment in higher education, and research and development). Robust evidence has since been collected showing how excessive regulation in certain sectors negatively affects TFP growth and helps explain the productivity gap between countries operating at the frontier and the followers.

Improving institutional and structural factors can lead to higher TFP growth. Cette et al.[70] suggest that euro area countries could achieve significantly higher TFP growth if all moved towards best euro area practice in reducing tariff barriers and reducing employment protection, with gains potentially largest for those countries with the most regulated markets. Work carried out by the ECB[71] also suggests that the soundness of economic institutions (as evidenced, for example, by application of the rule of law, control of corruption, government effectiveness, regulatory quality), the complexity of the business environment (in terms of starting a business, obtaining credit, trading across borders), and the level of employment protection, all contribute to the differences in TFP performance across euro area countries.

Structural and institutional reforms can improve TFP via different channels. They improve the allocation of resources by promoting more efficient product and labour markets and better institutional frameworks (including those addressing insolvency). Recent OECD work[72] has shown that improving the efficiency of insolvency regimes is a particularly important structural policy in shaping aggregate TFP growth, as it lessens the obstacles to orderly exit for failing firms. A more competitive and business-friendly environment also increases dynamic efficiency, as higher levels of competition increase incentives to innovate, thus facilitating technological progress. Structural reforms tend to reduce the labour productivity gap between those firms operating at the frontier and the followers, since removing protection and barriers to entry promotes the diffusion of ideas to laggard firms and encourages improvements in management quality. There could also be important spillover effects of these reforms, particularly if they are concentrated in upstream services sectors and lead to cost and efficiency savings for downstream producers. The role of the newly established

69 Aghion P. and Howitt P., "Joseph Schumpeter Lecture – Appropriate growth policy: A unifying framework", *Journal of the European Economic Association* Vol. 4, Nos 2-3, May 2006, pp. 269-314.

70 Cette G., Lopez, J. and Mairesse, J., "Market Regulations, Prices and Productivity", *American Economic Review: Papers and Proceedings*, Vol. 106, No 5, May 2016, pp. 104-8.

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

72 Andrews D., Criscuolo, C. and Gal P.N., "The global productivity slowdown, technology divergence and public policy: a firm level perspective", *Hutchins Center Working Paper Series*, No 24, September 2016.

national productivity boards (NPBs) may contribute to fostering productivity-enhancing reforms across the euro area countries.

The role of national productivity boards

On 20 September 2016 the European Council recommended the establishment of productivity boards at the national level across the EU. These boards are expected to be operational by March 2018. The recommendation was laid down in the Five Presidents' Report[73], which stressed the importance of convergence as a means of improving and equalising resilience of European economic structures. NPBs are expected to be a key element of Stage 1 of European Monetary Union deepening, which aims to strengthen the current institutional setting and encourage greater progress of euro area countries towards best practice, leading to higher aggregate performance.

The Council's recommendation specifies that "these boards should analyse productivity and competitiveness developments including relative to global competitors, taking into account national specificities and established practices." It also stresses that the notions of productivity and competitiveness should be considered comprehensively, paying attention to their long-term drivers such as innovation and the capacity to attract investment, the quality of businesses and human capital, and cost and non-cost factors. The recommendation allows for different types of institutional design (for example the tasks of NPBs may be carried out by bodies which already exist), provided that certain minimum requirements are met with regard to, in particular, functional independence, analytical rigour and transparency.

Some euro area countries – for example Belgium, Germany, Ireland, France and the Netherlands – already have bodies that perform tasks of a similar nature to the remit of the productivity boards. While there are differences across the countries mentioned, each of these bodies generally has both an ex ante role (in that it evaluates policies proposed by the relevant government) and an ex post role (it monitors the implementation of such policies).

The NPBs are expected to contribute to the concrete design and foster national ownership of productivity-enhancing structural reforms. It appears to be crucial that awareness within individual euro area countries of the benefit of structural reforms is enhanced and that independent technical bodies assist in the design of these reforms and in monitoring their implementation. These boards are also expected to increase coordination of structural reform implementation at the euro area level. To meet this objective, the Council's recommendation proposes a regular exchange of views and best practice among the productivity boards of the euro area countries. Moreover, it is also envisaged that the work and recommendations of the productivity boards could be assisted by the Commission at the supranational level, within the framework of the European Semester. Strong information sharing, exchange of best practice and a deeper understanding of the obstacles to higher growth in labour productivity and competitiveness should make it easier to align policies that are both in the best interests of the European Union as a whole and which target specific needs at the country level.

[73] Juncker, J.-C. et al., *Completing Europe's Economic and Monetary Union*, European Commission, 22 June 2015.

6 Concluding remarks

The slowdown in euro area productivity growth since the economic and financial crisis is likely to stem from a combination of cyclical and secular forces. On the cyclical side, increased uncertainty and credit restrictions arising from the long-running crisis are likely to have held back some innovative activities and growth of firms with high productivity, slowed the reallocation of resources from less to more productive units, as well as reduced the willingness of firms to take on entrepreneurial risk. Nevertheless, the marked slowdown seen since the crisis represents the continuation of a downward trend in labour productivity growth across advanced economies, which began in the mid-1990s.

From a longer-term perspective, labour productivity growth in the euro area has been weak by international standards for two decades. This deficit is likely to reflect long-standing structural rigidities – including more highly-regulated product and labour markets – which constrain business growth and innovation in the euro area to a greater extent than in many other advanced economies. There is now a significant and growing body of evidence highlighting the mechanisms and extent of "business unfriendly" administrative and bureaucratic burdens on labour productivity growth. These relate, inter alia, to deficiencies in institutional and regulatory quality, impediments to entry and exit of firms, limitations on credit availability, higher debt workout costs, deficiencies in systems of contract enforcement, and the design of employment protection legislation.

Structural reforms to boost labour productivity growth in the euro area are particularly pressing in the light of the area's aging population and because the full beneficial effects of such reforms are only visible over the medium term. While the economic recovery is firming, a reinvigoration of the reform process is needed to translate the cyclical pick-up into a stronger trend productivity growth. Reforms addressing key institutional weaknesses such as bottlenecks and inefficiencies in the regulatory system, inefficiencies and waste in public administration, poor control of corruption and malfunctioning judicial systems appear to be critical in many euro area countries. Better debt workout mechanisms, including enhanced efficiency of judicial processes and out-of-court mechanisms, would help alleviate the debt burden of viable, productive firms, facilitate exit of unviable firms and open markets for new start-ups. In many cases, these reforms are likely to entail relatively low short term economic costs, yet are key to instilling confidence, improving the business environment, and boosting labour productivity. The completion of a capital markets union would also provide entrepreneurs and innovators with alternative sources of financing for innovative projects. Finally, enhancing further efforts to improve skills acquisition and mobility would aid sectoral reallocation and thus allow all citizens to benefit from a higher growth economy.

By placing labour productivity growth firmly at the core of post-crisis economic policy, the newly created National Productivity Boards could help to increase the impetus for further structural reforms which are needed to boost labour productivity growth in the euro area – in a sustainable way – over coming decades. The success of the NPBs will, however, depend in large part on the various agents involved being willing to undertake the necessary reforms.

2 Harmonised statistics on payment services in the Single Euro Payments Area

The annual payments statistics compiled by the European System of Central Banks (ESCB) have recently been significantly enhanced. This is due to the need to reflect substantial developments in the payments market in Europe, in particular the implementation of the Single Euro Payments Area (SEPA). This article presents the rationale for the enhancements made to the payments statistics and describes how reporting has been improved and harmonisation increased. It provides an overview of the results of the first production rounds in accordance with the new reporting framework, highlighting the enhanced detail, quality, comparability and usability of the statistics. Moreover, the article highlights the need for further updating of the reporting requirements to keep the statistics fit for use.

Introduction

Payments statistics serve two main purposes: (i) to provide an overview to the general public and relevant stakeholders of the world of payments in Europe in terms of volumes, values, services, providers and systems; and (ii) to support ESCB policy decisions in this area with relevant statistical information. Both purposes entail updating the reporting framework to take into account the evolution of the payments market. A new legal act[74] was adopted in late 2013, which led to the enhancement of European payments statistics by requiring them to reflect – among other things – changes brought about by the implementation of SEPA through the related European legislation, in particular the Payment Services Directive[75] (PSD). The new legislation was also aimed at better covering innovations, especially regarding payment initiation channels. Further work on these aspects is still needed in the light of ongoing developments in technology and legislation.

In order to enhance the legal framework for European payments statistics, a structured merits and costs procedure **was followed, which involved the relevant ESCB committees and working groups and culminated in the final decision of the ECB Governing Council in 2013.** The procedure was set up to assess the merits and costs of preparing new or enhanced ESCB statistics, with the aim of minimising the reporting burden. It was launched in 2011, prior to an overhaul of the existing statistics on payments aimed at reflecting new conditions, in particular those created by SEPA. The procedure comprised a fact-finding exercise, a costs assessment and a merits assessment, followed by the matching of merits and costs related to the proposed enhancements. The fact-finding exercise enabled input to be

[74] Regulation (EU) No 1409/2013 of the European Central Bank of 28 November 2013 on payments statistics (ECB/2013/43) (OJ L 352, 24.12.2013, p. 18).

[75] Directive 2007/64/EC of the European Parliament and of the Council of 13 November 2007 on payment services in the internal market amending Directives 97/7/EC, 2002/65/EC, 2005/60/EC and 2006/48/EC and repealing Directive 97/5/EC (OJ L 319, 5.12.2007, p. 1). See also Regulation (EU) No 260/2012 of the European Parliament and of the Council of 14 March 2012 establishing technical and business requirements for credit transfers and direct debits in euro and amending Regulation (EC) No 924/2009 (OJ L 94, 30.3.2012, p. 22) – often referred to as the "SEPA Regulation".

gathered from the perspective of data reporters, collectors and users, at both the national and European levels; it was intended to support the development of an appropriately defined and harmonised reporting population, and to prepare for the costs assessment through the establishment of various options for future reporting. The costs assessment distinguished between implementation costs and running costs, specified per actor involved in the reporting process and per new item to be reported. The merits assessment combined quantitative and qualitative considerations regarding the usefulness and relevance of the data for the fulfilment of ESCB tasks. The proposed enhancements (especially those with higher costs) were then reviewed, taking into account their merits, in order to determine the actual changes to implement under a cost-conscious approach. Following the merits and costs procedure the reporting population was expanded and the reporting framework enhanced and harmonised to ensure better comparability, in particular through methodological changes and new breakdowns. The enhancements help ensure that payments carried out in both SEPA and domestic formats are more closely monitored, and that new information is set out on payment service providers and payment services. These enhancements are analysed in more detail in the subsequent sections of this article.

This article considers the process that led to the current enhanced payments statistics, their implementation and prospects for further enhancements. The second section discusses the recently enhanced legal framework. The third section focuses on the results of the first production rounds based on the new methodology. The fourth section concludes, looking ahead to the next review of the legal framework for European payments statistics.

Legal framework and recent enhancements

The legal framework for the compilation of payments statistics has recently been enhanced following the ECB's merits and costs procedure. Up to reference year 2013 these statistics were collected on the basis of the reporting framework set out in an ECB Guideline[76] addressed to Eurosystem national central banks (NCBs). In the absence of actual data, the Guideline allowed for NCBs to compile the statistics on a best efforts basis, relying on external data sources.[77] NCBs could also provide estimates or provisional data if actual figures were not available.

In order to increase the quality and comparability of data across countries, and thus the usability of the statistics, it was considered necessary to harmonise the reporting obligations and to expand the reporting population to all relevant

[76] Guideline of the European Central Bank of 1 August 2007 on monetary, financial institutions and markets statistics (recast) (ECB/2007/9) (OJ L 341, 27.12.2007, p. 1).

[77] ECB Regulations concerning the collection of statistical information are legal acts directly addressed to the relevant reporting agents. ECB Guidelines on statistics are addressed to NCBs, establishing obligations for them to report statistics to the ECB, without having a direct legal effect on the reporting agents and their reporting burden. Therefore, in the absence of actual data already available at the NCB, external data sources may also be used. Consequently, the coverage of the statistics collected based on an ECB Guideline may vary between countries owing to different reporting populations.

institutions. Accordingly, as of reference year 2014, payments statistics have been collected on an annual basis in line with Regulation ECB/2013/43, which is addressed to all payment service providers and payment system operators resident in the euro area.[78] Payment service providers (PSPs) are institutions – defined in the PSD – which provide payment services throughout the European Union. They comprise mainly credit institutions, electronic money institutions and payment institutions. Payment system operators (PSOs) are legal entities that are legally responsible for operating a payment system. In accordance with the provisions of the Regulation, the ECB maintains and publishes a list of institutions operating in the European Union with relevance for payments statistics. This list comprises all PSPs and PSOs resident in EU countries.

Payments statistics are compiled through harmonised data collection managed at the national level by each EU NCB. PSPs and PSOs report the statistics to the NCB of the Member State of residency. The NCBs then aggregate the data and submit the national statistics to the ECB. The latter carries out the final level of aggregation to produce euro area and EU figures and publishes all the datasets.

Close cooperation between the ECB and the statistical departments of the NCBs is crucial for the production of high-quality statistics. During the annual production rounds for payments statistics, the ECB and NCBs closely cooperate through bilateral and multilateral interactions, and the ECB ensures the required degree of cross-country harmonisation. In particular, in accordance with the ECB's Statistics Quality Framework and quality assurance procedures, the ECB carries out a comprehensive set of quality checks on the data reported by each NCB. These checks have been jointly developed and agreed on within the ESCB and relate to the completeness of the data provided and the consistency of the statistics. Revisions to previously transmitted data are also analysed and plausibility checks are performed to detect outliers in the reported data (i.e. observations with a clearly larger or smaller value than other observations of the time series). During the production, the NCBs are given enough time to address the issues detected and to correct any potentially incorrect data. More in-depth analysis of the statistics takes place outside the regular production rounds, when there is more time for fine-tuning concepts related to the technical reporting or the underlying methodology.

[78] Additional requirements are laid down in Guideline ECB/2014/15 (as amended), addressed to euro area NCBs. See 2014/810/EU: Guideline of the European Central Bank of 4 April 2014 on monetary and financial statistics (recast) (ECB/2014/15) (OJ L 340, 26.11.2014, p. 1). In addition, Recommendation ECB/2013/44 encourages the NCBs of Member States whose currency is not the euro to implement the reporting framework set out in the Regulation. See Recommendation of the European Central Bank of 28 November 2013 on payments statistics (ECB/2013/44) (OJ C 5, 9.1.2014, p. 1).

Results of the first annual production rounds based on the enhanced methodology

Compared with the previous reporting framework, several important methodological changes – in addition to the expansion of the reporting population – have been introduced in the enhanced statistics. Overall, the methodology applied to both existing and new requirements has been aligned with the definitions given in the relevant EU legislation, such as the PSD, Electronic Money Directive[79], Regulation on MFI balance sheet statistics[80] and European System of Accounts (ESA 2010) Regulation[81]. First of all, to monitor the changes brought about by SEPA, a new concept of residency has been adopted: the new statistics mark a shift from using the location of the payer or the terminal[82] as the basis for the reporting to using the residency of the PSP. This is in line with the principle that, within SEPA, consumers, businesses and public administrations can advantageously execute both domestic and cross-border[83] payments in euro via a single institution and under the same conditions, irrespective of the physical location of the payer, the payee or the PSPs involved.

The enhanced requirements now enable payments involving domestic PSPs only to be distinguished from those also involving PSPs resident outside the reporting country. Moreover, for all main categories of sent payments, a breakdown by counterparty country is required when the counterparty belongs to the European Union. Information is also requested on cross-border payments received. This enables cross-country payment patterns within SEPA to be detected.

The statistics show that in the European Union most payments are still carried out between PSPs resident in the same country. In particular, as can be seen in Chart 1 below, within the euro area, around 2.5% of credit transfers and 1.7% of direct debits initiated in 2015 were sent to an account held at a PSP resident in another country. This means that the vast majority – above 97% – were still domestic. For the European Union as a whole, the shares were 2.9% and 1.7% respectively; however, data are not available for all non-euro area countries. Compared with cross-border credit transfers and direct debits, the share of cross-border card payments is higher for both the euro area and the European Union: in the euro area, 7.6% of card payments sent from accounts held at euro area PSPs were cross-border payments; for the European Union as a whole, the share was 7.4%. Around 92.5% of EU card payments were still domestic.

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79 Directive 2009/110/EC of the European Parliament and of the Council of 16 September 2009 on the taking up, pursuit and prudential supervision of the business of electronic money institutions amending Directives 2005/60/EC and 2006/48/EC and repealing Directive 2000/46/EC (OJ L 267, 10.10.2009, p. 7).

80 Regulation (EU) No 1071/2013 of the European Central Bank of 24 September 2013 concerning the balance sheet of the monetary financial institutions sector (recast) (ECB/2013/33) (OJ L 297, 7.11.2013, p. 1).

81 Regulation (EU) No 549/2013 of the European Parliament and of the Council of 21 May 2013 on the European system of national and regional accounts in the European Union (OJ L 174, 26.6.2013, p. 1).

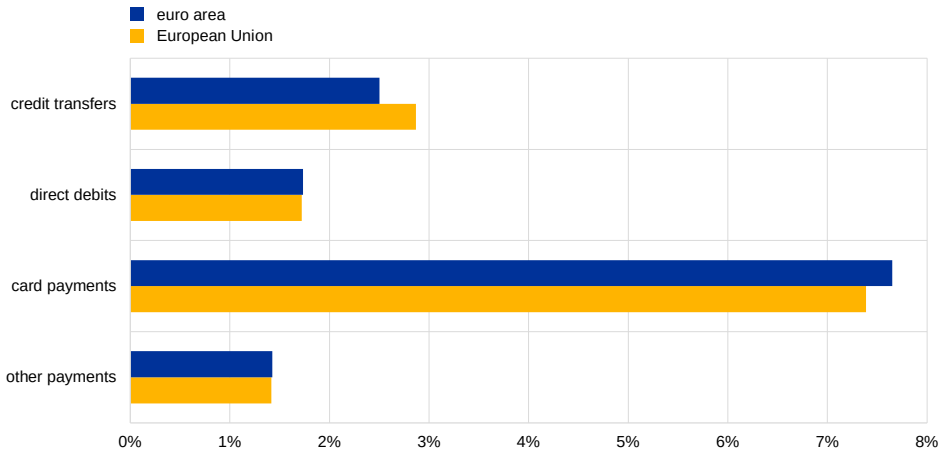
82 The location of the terminal was meant to give an indication of the location of the merchant.

83 Cross-border payments are defined as payments where the PSP of the payer and that of the payee are resident in different countries.

Chart 1

Share of cross-border payments in the euro area and European Union in 2015

(percentages)



Source: ECB.
Note: The category "other payments" comprises e-money payments, cheques and other payment services, as defined in the PSD.

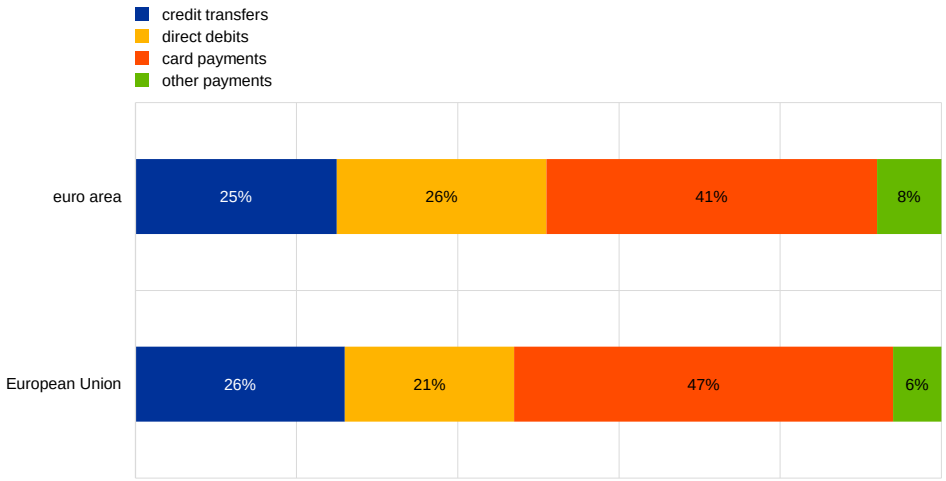
Overall, the new statistics illustrate how the usage of card payments has increased in recent years to the extent that they account for almost half of all cashless payments in the European Union. In particular, in the five-year period up to the end of 2015, the share of card payments increased from 39% to 47% in the European Union and from 34% to 41% in the euro area.[84] Consequently, the relative shares of credit transfers and direct debits decreased; in 2015 the shares were 26% and 21% respectively in the European Union and 25% and 26% respectively in the euro area (see Chart 2) – a reduction of a few percentage points compared with five years earlier.

[84] Payments statistics for the five-year period up to the end of 2015 are available in the Statistical Data Warehouse.

Chart 2

Relative shares of payment services in the euro area and European Union in 2015

(percentages)



Source: ECB.
Note: The category "other payments" comprises e-money payments, cheques and other payment services, as defined in the PSD.

Furthermore, the new statistics differentiate between SEPA and non-SEPA payments for credit transfers and direct debits. A sub-category entitled "of which: non-SEPA" has been added for reporting the total number of transactions and the total value of transactions in relation to both credit transfers and direct debits. This is in order to obtain information on payments made with niche products, TARGET2 payments and payments in currencies other than the euro; all of which use non-SEPA standards. Several other new indicators have also been introduced, as shown in the table below.

Table

Overview of the new indicators introduced in Regulation ECB/2013/43 and Guideline ECB/2014/15*

Indicator group	New indicators
Institutions offering payment services to non-MFIs**	Information on the number of payment and e-money accounts held in credit institutions, electronic money institutions and other PSPs Information on the outstanding amount of e-money issued by credit institutions and other PSPs Information on the number of payment institutions operating in the country on a cross-border basis
Payment card functions and accepting devices	Information on the number of cards on which e-money can be stored directly and on cards which give access to e-money stored on e-money accounts Information on the number of point-of-sale (POS) terminals, with a sub-category for e-money card terminals
Payment transactions involving non-MFIs	Geographical breakdowns for credit transfers, direct debits, card payments, e-money payments, cheques, other payment services and total payments sent Information on cross-border credit transfers, direct debits, e-money payments, cheques and other payment services received Information on non-SEPA credit transfers and direct debits Information on credit transfers and direct debits initiated in a file/batch and on a single payment basis; information on online banking-based credit transfers Information on card payments initiated by electronic funds transfer at point of sale (EFTPOS) and initiated remotely Information on e-money payments with e-money cards and e-money accounts Information on money remittances and transactions via telecommunication, digital or IT devices
Payment transactions per type of terminal involving non-MFIs	Geographical breakdowns for ATM cash withdrawals and deposits, POS transactions and e-money card loading and unloading transactions Information on e-money payments with cards with an e-money function
Payments processed by selected payment systems	Breakdowns into domestic and cross-border payments for all payment services
Activities of PSPs per type of payment service	Information on payments processed by different types of PSP per type of payment service

*2014/810/EU: Guideline of the European Central Bank of 4 April 2014 on monetary and financial statistics (recast) (ECB/2014/15) (OJ L 340, 26.11.2014, p. 1).
**Non-MFIs are natural or legal persons who do not belong to the monetary financial institutions (MFI) sector. For the purpose of payments statistics, all PSPs are excluded from the non-MFI sector.

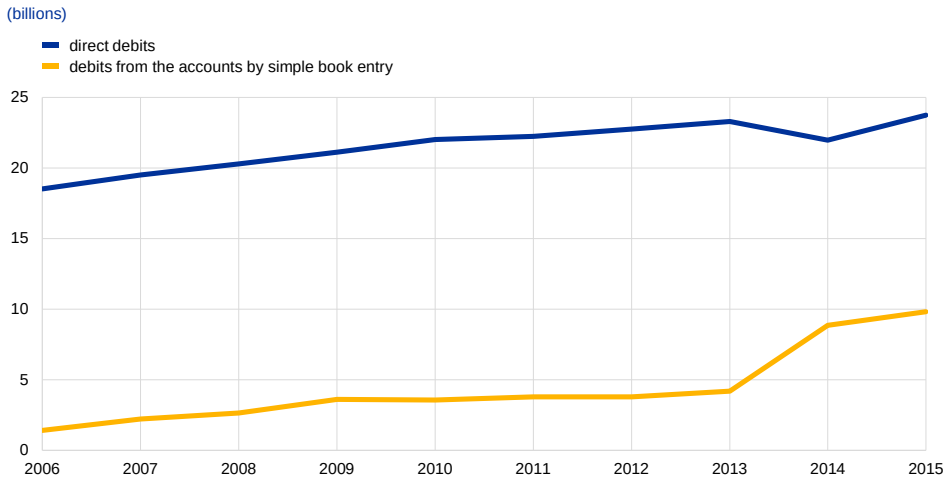
The harmonisation of the reporting population and underlying methodology across countries, made possible by framing the requirements within an ECB Regulation, has resulted in a clear improvement in the comparability and usability of the statistics. In particular, in contrast with the previous reporting framework, the Regulation provides a comprehensive set of data definitions to be applied in a similar way by all reporting agents. When needed, further clarifications have been agreed on within the applicable ESCB committees and working groups. This is to ensure that the quality of the statistics remains high and that the national figures can be used for country comparisons despite certain country-specific phenomena. As an example, in Germany one-off direct debits initiated by a payment card (electronic direct debits known as “ELV” transactions) were previously reported under card payments. With the adoption of Regulation ECB/2013/43, as of reference year 2014 these transactions have been reported as direct debits, in accordance with the underlying payment service used. This change enhances the comparability of data across countries.

The new requirements have significantly enhanced the quality and overall comparability of the statistics, and remaining instances of inconsistency within and across countries are expected to be phased out soon. These inconsistencies are mainly due to the reclassification of certain data. Relevant examples are offered by the figures on credit transfers, direct debits and book entries

in selected countries. Chart 3 below shows the impact of the reclassification of book entries from direct debits to the category “debits from the accounts by simple book entry” as of reference year 2014, which is mostly explained by the changes in reporting implemented by German and Austrian PSPs. Simple book entries are payments initiated by a PSP without a specific transaction order so as to credit or debit a customer’s account without the use of a payment instrument. According to the PSD, these are not payment services and are therefore not included in credit transfers or direct debits.

Chart 3

Number of direct debits and debits from the accounts by simple book entry in the European Union



Source: ECB.

Finally, the expectation is for the homogeneity and reliability of data to increase over time. In fact, different practices followed by NCBs have been further harmonised through continuous dialogue within the central bank community and with the reporting agents.

Next review of the ECB legal framework for European payments statistics

As technological, regulatory and other developments are impacting the retail payments landscape, the data collection may be reviewed at regular intervals and adjusted to market developments to keep the statistics fit for use. The need to continuously enhance statistical reporting in the field of payments is felt worldwide. The ECB and some Eurosystem NCBs are actively contributing to the work underway at the global level in their capacity as members of the Committee on Payments and Market Infrastructures (CPMI) of the Bank for International Settlements (BIS). Methodological and definitional issues are currently being analysed by CPMI members, and a more general restructuring of the format of the statistics on payments, clearing and settlement systems published by the BIS is underway. This restructuring and analysis includes the removal of obsolete

information and the addition of new indicators relevant in analysing today's evolving landscape. Payments fall within the scope of this analysis, especially considering the high relevance of technological advances and regulatory changes for the demand and the supply side of the payment industry.

Box

Business developments in the field of payment services in Europe

Notable examples of potential information to be captured following further enhancements to payments statistics, from a technological perspective, include (i) whether a card payment was made in a contact or contactless mode, (ii) whether a mobile device was used for making a person-to-person (P2P) or consumer-to-business (C2B) payment, and (iii) whether the payment was made using an e-commerce payment solution. Other relevant developments that enhanced payments statistics may help monitor are those related to instant payments, i.e. immediate or close-to-immediate transfers of reusable funds between end users, with 24/7/365 availability. From a regulatory perspective, the revised Payment Services Directive (EU/2015/2366)[85] (or "PSD2") has introduced two new payment services, payment initiation services and account information services, which may generate the need to collect additional data from payment service providers.

New or existing means of performing payments must first and foremost be secure. Enhanced payments statistics could also support the ECB and central banks in monitoring fraud levels as part of their oversight of payment instruments. The PSD2 has reinforced the need for fraud monitoring and requires PSPs to collect and report data on fraud relating to different means of payment.[86]

In any case, further enhancements to the payments statistics intended to cover the above developments would need to take into account the timeline for the PSD2 and the related Regulatory Technical Standards to become applicable and for harmonised instant payments in euro to become available to end users.

As was the case with the latest update of the reporting framework, where a new or substantially enhanced regulation on statistics is introduced by the ECB, it will always be preceded by a systematic assessment of the merits and costs associated with collecting the new data.[87] A review of the appropriateness of current reporting requirements, i.e. a post-implementation assessment, is also part of the procedure. The purpose is to evaluate the continued relevance of the statistics, in particular whether they adequately meet the specified needs of the users and the new requirements. In the initial stage of the procedure the existing

[85] Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and repealing Directive 2007/64/EC (OJ L 337, 23.12.2015, p. 35).

[86] In this respect, overlaps and dual reporting to different authorities should be avoided.

[87] Any future review of the reporting framework will be preceded by a merits and costs procedure before a decision is made as to the actual implementation of the proposed changes.

methodology can also be updated.[88] The implementation of any additional new requirements would increase the burden on businesses and should therefore be preceded by a careful, in-depth assessment of the associated benefits and costs.

Conclusions

Significant developments in the European payments market called for the payments statistics compiled by the ESCB to be updated. Following a merits and costs procedure carried out in 2011 and 2012, a new ECB Regulation on payments statistics was introduced at end-2013. Correspondingly, as of reference year 2014, all payment service providers and payment system operators resident in the euro area have been obliged to report the information included in the Regulation to the NCB of the Member State of residency.

In addition to the expansion of the reporting population, several new requirements and enhancements were added to keep the statistics fit for purpose. Existing definitions and concepts were clarified and aligned with the relevant European legislation. The ECB and NCBs cooperated closely in making these amendments.

The new statistics show that the quality and comparability of the data has improved thanks to more harmonised reporting across countries and institutions. However, some inconsistencies still exist across countries. These are currently being analysed and further clarification is being provided. Overall, it is expected that the homogeneity and reliability of the data will increase over time.

In order to keep pace with the technological, regulatory and other developments that are impacting the payments landscape in Europe, the statistical reporting requirements may be reviewed at regular intervals.

In addition to European payments statistics, the ECB and some Eurosystem NCBs are also contributing to the work related to updating statistics on payments, clearing and settlement systems in CPMI countries published by the BIS.

[88] For instance, the definition of cross-border card payments used in payments statistics may need to be fine-tuned to take into account the definition introduced in the Regulation on interchange fees for card-based payment transactions. See Regulation (EU) 2015/751 of the European Parliament and of the Council of 29 April 2015 on interchange fees for card-based payment transactions (OJ L 123, 19.5.2015, p. 1).

Statistics

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4 Prices and costs	S 14
5 Money and credit	S 18
6 Fiscal developments	S 23

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	1.2	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 Q1	0.8	0.2	0.2	0.5	1.3	0.6	1.0	1.9	1.1	0.4	0.0	2.1	0.0
Q2	0.8	0.4	0.6	0.5	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	0.3	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
2016 Oct.	-	-	-	-	-	-	1.4	1.7	1.6	0.9	0.1	2.1	0.5
Nov.	-	-	-	-	-	-	1.5	1.7	1.7	1.2	0.5	2.3	0.6
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.	-	-	-	-	-	-	.	.	2.4	2.3	.	0.9	1.5

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.

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	56.3	51.4	50.4	53.8	51.8	53.7	50.4	1.3	3.7	-0.3
2016	51.6	52.4	53.4	50.5	51.4	53.3	51.8	51.9	50.2	1.0	1.2	0.8
2016 Q2	50.7	51.5	52.6	49.0	50.5	53.1	49.9	51.0	48.9	-0.1	0.3	-0.3
Q3	51.3	51.9	51.6	49.6	51.7	52.9	51.7	51.2	50.1	0.8	0.9	0.7
Q4	53.2	54.6	55.6	52.0	53.1	53.8	53.3	53.1	50.6	1.3	-1.1	2.9
2017 Q1	53.3	54.3	54.6	52.5	52.3	55.6	53.4	53.2	51.9	.	.	.
2016 Nov.	53.0	54.9	55.3	52.0	52.9	53.9	53.2	53.0	50.6	0.5	-1.0	1.5
Dec.	53.5	54.1	56.7	52.8	53.5	54.4	53.5	53.5	50.7	1.3	-1.1	2.9
2017 Jan.	53.9	55.8	55.2	52.3	52.2	54.4	53.1	54.1	51.7	3.2	0.5	5.1
Feb.	52.8	54.1	53.8	52.2	52.6	56.0	53.7	52.5	52.2	3.8	0.9	5.8
Mar.	53.2	53.0	54.9	52.9	52.1	56.4	53.5	53.1	51.7	.	.	.
Apr.	.	.	.	.	.	56.7	.	.	.	.	.	.

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 Sep.	-0.34	-0.37	-0.30	-0.20	-0.06	0.85	-0.03
Oct.	-0.35	-0.37	-0.31	-0.21	-0.07	0.88	-0.02
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

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 Sep.	-0.74	-0.72	-0.72	-0.59	-0.16	0.56	1.00	0.60	-0.71	-0.71	-0.22	0.64
Oct.	-0.82	-0.74	-0.66	-0.38	0.14	0.88	1.18	1.03	-0.65	-0.51	0.17	1.03
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

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 Sep.	325.5	3,012.1	635.6	255.4	617.6	281.3	142.8	518.7	396.1	251.6	321.0	780.1	2,157.7	16,737.0
Oct.	327.9	3,042.3	649.8	253.5	620.8	291.0	146.7	519.1	393.0	247.2	318.4	768.8	2,143.0	17,044.5
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

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 Mar.	0.11	0.58	0.59	0.88	6.63	16.88	5.14	5.97	6.34	2.53	1.90	2.10	2.10	2.24	2.38	2.11
Apr.	0.11	0.57	0.58	0.85	6.54	16.82	5.19	6.00	6.35	2.56	1.86	2.09	2.17	2.23	2.41	2.09
May	0.10	0.56	0.54	0.87	6.56	16.75	5.21	6.09	6.46	2.56	1.85	2.03	2.06	2.12	2.37	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	1.97	2.01	2.32	1.97
July	0.09	0.52	0.50	0.92	6.46	16.80	5.14	5.96	6.29	2.39	1.81	1.96	1.96	1.96	2.33	1.92
Aug.	0.08	0.51	0.52	0.84	6.48	16.78	5.43	6.01	6.37	2.40	1.87	1.96	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	0.76	6.43	16.78	5.17	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	1.88	1.80	1.75	2.24	1.78
2017 Jan.	0.07	0.48	0.42	0.76	6.35	16.62	5.05	5.87	6.23	2.27	1.76	1.87	1.80	1.76	2.28	1.81
Feb. (p)	0.07	0.48	0.40	0.76	6.42	16.68	5.09	5.72	6.17	2.39	1.78	1.89	1.84	1.81	2.29	1.85

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 Mar.	0.13	0.16	0.87	2.89	3.03	3.20	2.68	1.92	2.03	2.02	1.38	1.74	1.77	2.04
Apr.	0.12	0.19	0.64	2.80	2.99	3.12	2.66	1.93	1.96	1.98	1.38	1.58	1.81	2.00
May	0.11	0.13	0.63	2.76	2.91	3.10	2.61	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	1.90	1.85	1.34	1.60	1.64	1.89
July	0.09	0.16	0.42	2.70	2.73	3.07	2.47	1.86	1.91	1.80	1.28	1.56	1.69	1.87
Aug.	0.09	0.16	0.47	2.74	2.69	3.01	2.46	1.86	1.94	1.79	1.22	1.48	1.54	1.83
Sep.	0.09	0.12	0.47	2.72	2.65	2.96	2.42	1.82	1.85	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	1.83	1.72	1.28	1.40	1.63	1.83
Nov.	0.07	0.12	0.42	2.64	2.60	2.91	2.38	1.82	1.82	1.68	1.28	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	1.85	1.73	1.22	1.39	1.63	1.79
Feb. (p)	0.06	0.10	0.54	2.65	2.58	2.78	2.35	1.76	1.76	1.71	1.19	1.41	1.52	1.76

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	1,320	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 Sep.	1,310	539	145	.	69	492	66	354	159	44	.	30	86	36
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.	1,277	536	136	.	74	469	63	393	187	39	.	39	88	41
Feb.	1,310	554	143	.	80	466	66	324	157	37	.	31	72	29
Long-term														
2014	15,136	4,051	3,167	.	990	6,285	642	220	65	44	.	16	85	10
2015	15,244	3,784	3,286	.	1,055	6,482	637	215	68	45	.	13	81	9
2016	15,261	3,647	3,197	.	1,134	6,643	641	208	59	46	.	17	78	8
2016 Sep.	15,187	3,678	3,142	.	1,098	6,631	638	217	52	46	.	29	84	7
Oct.	15,217	3,674	3,170	.	1,104	6,628	641	239	56	61	.	22	92	8
Nov.	15,279	3,667	3,177	.	1,130	6,664	641	216	43	64	.	26	76	7
Dec.	15,261	3,647	3,197	.	1,134	6,643	641	163	45	77	.	13	25	2
2017 Jan.	15,317	3,651	3,206	.	1,136	6,687	638	302	100	72	.	15	107	9
Feb.	15,331	3,668	3,202	.	1,138	6,684	640	221	72	39	.	10	88	11

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	16,456.3	4,593.5	3,298.0	.	1,048.9	6,823.2	692.7	5,958.0	591.1	780.6	4,586.3
2015	16,517.5	4,301.1	3,437.6	.	1,116.7	6,960.1	702.1	6,744.7	586.1	905.6	5,253.0
2016	16,507.7	4,166.0	3,335.3	.	1,194.8	7,108.6	703.0	7,029.1	538.7	1,017.9	5,472.5
2016 Sep.	16,496.8	4,216.8	3,286.8	.	1,167.0	7,122.4	703.9	6,593.0	427.5	872.2	5,293.3
Oct.	16,513.4	4,203.6	3,315.1	.	1,175.5	7,111.9	707.3	6,665.7	479.2	907.7	5,278.8
Nov.	16,589.3	4,203.5	3,329.4	.	1,199.8	7,150.4	706.1	6,651.0	482.3	952.8	5,215.9
Dec.	16,507.7	4,166.0	3,335.3	.	1,194.8	7,108.6	703.0	7,029.1	538.7	1,017.9	5,472.5
2017 Jan.	16,594.8	4,187.0	3,341.9	.	1,209.7	7,155.7	700.5	7,015.2	542.3	1,016.0	5,456.9
Feb.	16,640.5	4,222.0	3,344.6	.	1,218.0	7,149.7	706.1	7,199.0	539.0	1,024.3	5,635.7
Growth rate											
2014	-0.7	-8.1	0.4	.	4.9	3.1	1.1	1.6	7.2	2.0	0.7
2015	0.3	-7.0	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 Sep.	0.0	-3.8	-0.8	.	5.6	1.6	1.9	0.9	2.8	1.7	0.6
Oct.	-0.2	-4.0	-1.4	.	6.3	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.	0.7	-2.0	-1.2	.	8.9	2.1	-0.3	0.6	1.5	1.1	0.4
Feb.	1.1	-1.6	0.7	.	9.8	1.6	0.7	0.7	4.1	1.1	0.3

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	97.8	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	91.7	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	89.6	90.3	.	.	.	109.2	88.7
2016 Oct.	95.5	90.8	91.8	-	-	-	110.6	90.1
Nov.	95.0	90.2	91.1	-	-	-	110.3	89.7
Dec.	94.2	89.6	90.4	-	-	-	109.2	88.9
2017 Jan.	94.4	89.7	90.4	-	-	-	109.7	89.1
Feb.	93.9	89.3	89.9	-	-	-	108.8	88.3
Mar.	94.4	89.8	90.4	-	-	-	109.2	88.6
Percentage change versus previous month								
2017 Mar.	0.6	0.5	0.5	-	-	-	0.4	0.3
Percentage change versus previous year								
2017 Mar.	0.4	0.3	-0.6	-	-	-	-0.7	-1.4

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 Oct.	7.420	7.507	27.022	7.440	307.000	114.473	4.308	0.894	4.4942	9.707	1.089	1.103
Nov.	7.388	7.521	27.033	7.441	308.816	116.933	4.391	0.869	4.5100	9.851	1.076	1.080
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
Percentage change versus previous month												
2017 Mar.	0.8	-0.3	0.0	0.0	0.4	0.4	-0.5	1.5	0.8	0.5	0.4	0.4
Percentage change versus previous year												
2017 Mar.	2.0	-1.8	-0.1	-0.3	-0.5	-3.8	-0.1	10.9	1.8	2.6	-2.0	-3.7

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	219.5	225.4	-5.9	95.3	78.2	73.4	95.8	-0.5	44.7	51.4	6.6	126.2
Transactions												
2016 Q1	409.5	359.8	49.6	124.8	74.5	132.4	28.3	29.0	122.3	257.0	1.0	-
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	-
2016 Sep.	-70.3	-126.8	56.5	-5.5	-56.0	11.7	5.5	3.7	-86.9	-76.3	6.8	-
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.	379.1	367.4	11.8	108.2	91.3	43.6	31.2	2.3	230.2	244.9	-5.1	-
Feb.	189.8	193.0	-3.2	95.1	95.3	53.8	-19.3	5.0	34.0	117.0	2.0	-
12-month cumulated transactions												
2017 Feb.	1,137.1	786.2	350.9	438.4	285.0	409.7	-58.5	0.9	275.6	559.7	12.5	-
12-month cumulated transactions as a percentage of GDP												
2017 Feb.	10.6	7.3	3.3	4.1	2.7	3.8	-0.5	0.0	2.6	5.2	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	10,135.9	9,776.3	5,632.2	2,125.5	1,988.4	1,000.4	600.0	383.1	30.2	359.5	4,532.9	4,173.3
2015	10,460.7	9,986.7	5,743.3	2,164.7	2,066.0	1,019.2	633.3	408.4	12.8	474.0	4,831.7	4,357.7
2016	10,740.9	10,259.0	5,877.0	2,221.7	2,161.2	1,055.4	660.9	439.7	-0.9	481.9	4,905.4	4,423.5
2016 Q1	2,660.8	2,534.0	1,454.6	551.3	526.6	259.7	162.4	103.2	1.5	126.8	1,200.1	1,073.3
Q2	2,672.0	2,548.8	1,462.9	553.7	534.4	260.3	163.6	109.2	-2.3	123.1	1,215.4	1,092.3
Q3	2,688.5	2,563.8	1,469.8	556.4	535.5	264.6	165.4	104.1	2.1	124.7	1,224.3	1,099.5
Q4	2,712.5	2,608.7	1,484.7	560.2	557.8	267.4	166.9	122.2	6.0	103.9	1,258.9	1,155.0
	as a percentage of GDP											
2016	100.0	95.5	54.7	20.7	20.1	9.8	6.2	4.1	0.0	4.5	-	-
	Chain-linked volumes (prices for the previous year)											
	quarter-on-quarter percentage changes											
2016 Q1	0.6	0.4	0.7	0.7	0.8	0.9	0.1	1.5	-	-	0.3	-0.1
Q2	0.3	0.4	0.4	0.3	1.1	-0.6	1.0	5.9	-	-	1.3	1.5
Q3	0.4	0.3	0.3	0.1	-0.2	1.5	0.4	-5.0	-	-	0.4	0.1
Q4	0.5	1.4	0.5	0.5	3.3	0.1	-0.4	17.5	-	-	1.8	3.9
	annual percentage changes											
2014	1.2	1.2	0.8	0.6	1.5	-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	-	-	6.5	6.5
2016	1.8	2.2	2.0	1.9	3.7	2.4	3.8	7.0	-	-	2.9	4.0
2016 Q1	1.7	2.1	2.0	2.0	2.5	2.0	4.1	1.4	-	-	2.4	3.4
Q2	1.6	2.3	1.9	2.1	3.8	1.9	5.2	6.2	-	-	2.5	4.1
Q3	1.8	1.8	1.8	1.7	2.4	2.6	3.9	-0.2	-	-	2.7	2.9
Q4	1.8	2.5	1.9	1.6	5.1	1.9	1.1	19.9	-	-	3.8	5.5
	contributions to quarter-on-quarter percentage changes in GDP; percentage points											
2016 Q1	0.6	0.4	0.4	0.1	0.2	0.1	0.0	0.1	-0.3	0.1	-	-
Q2	0.3	0.3	0.2	0.1	0.2	-0.1	0.1	0.2	-0.1	0.0	-	-
Q3	0.4	0.3	0.2	0.0	0.0	0.1	0.0	-0.2	0.1	0.1	-	-
Q4	0.5	1.3	0.2	0.1	0.7	0.0	0.0	0.7	0.3	-0.8	-	-
	contributions to annual percentage changes in GDP; percentage points											
2014	1.2	1.2	0.4	0.1	0.3	-0.1	0.3	0.1	0.3	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 Q1	1.7	2.0	1.1	0.4	0.5	0.2	0.2	0.1	0.0	-0.3	-	-
Q2	1.6	2.1	1.0	0.4	0.7	0.2	0.3	0.2	0.0	-0.5	-	-
Q3	1.8	1.8	1.0	0.4	0.5	0.3	0.2	0.0	0.0	0.0	-	-
Q4	1.8	2.4	1.0	0.3	1.0	0.2	0.1	0.8	0.0	-0.6	-	-

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	9,101.6	150.0	1,777.3	461.1	1,711.3	415.8	461.5	1,044.9	979.3	1,778.8	321.4	1,034.3
2015	9,388.9	150.6	1,886.9	466.7	1,766.5	429.1	459.8	1,062.8	1,022.0	1,817.7	326.8	1,071.8
2016	9,632.6	145.7	1,925.4	486.5	1,820.5	444.6	452.5	1,090.6	1,064.6	1,865.7	336.5	1,108.3
2016 Q1	2,387.2	36.1	478.8	120.2	450.1	109.8	113.8	269.8	262.7	462.3	83.5	273.6
Q2	2,396.2	35.9	476.9	120.8	452.8	110.8	113.0	271.8	265.4	465.0	83.9	275.7
Q3	2,410.8	36.2	480.9	121.7	455.2	111.4	113.0	273.3	267.1	467.7	84.2	277.7
Q4	2,431.5	37.3	486.0	123.3	460.5	112.3	112.6	275.5	268.9	470.4	84.7	281.1
	as a percentage of value added											
2016	100.0	1.5	20.0	5.1	18.9	4.6	4.7	11.3	11.1	19.4	3.5	-
	Chain-linked volumes (prices for the previous year)											
	quarter-on-quarter percentage changes											
2016 Q1	0.6	-1.2	0.4	1.1	1.0	0.9	1.0	0.3	0.8	0.4	0.5	0.1
Q2	0.3	-0.8	0.1	0.0	0.4	1.2	-0.6	0.3	1.1	0.2	0.2	0.5
Q3	0.4	-0.7	0.7	0.4	0.4	1.3	0.0	0.2	0.4	0.3	0.3	0.6
Q4	0.5	0.1	0.7	0.8	0.7	0.5	0.0	0.3	0.3	0.2	0.3	0.6
	annual percentage changes											
2014	1.2	1.2	2.4	-1.1	1.2	3.5	-1.2	0.5	2.5	0.5	0.1	1.1
2015	1.9	-0.6	4.3	-0.1	2.1	2.9	-0.4	0.8	2.9	1.0	0.0	3.2
2016	1.7	-2.0	1.5	1.9	2.4	3.3	0.3	1.0	3.0	1.1	1.3	2.5
2016 Q1	1.5	-1.8	1.7	1.4	2.3	2.5	0.3	0.8	2.7	0.9	0.9	3.3
Q2	1.6	-1.8	1.2	1.5	2.3	3.0	-0.3	1.0	3.3	1.0	1.3	2.4
Q3	1.7	-2.2	1.2	2.4	2.3	3.6	0.5	1.0	3.1	1.2	1.4	2.6
Q4	1.8	-2.6	2.0	2.3	2.5	4.0	0.4	1.1	2.6	1.1	1.4	1.8
	contributions to quarter-on-quarter percentage changes in value added; percentage points											
2016 Q1	0.6	0.0	0.1	0.1	0.2	0.0	0.0	0.0	0.1	0.1	0.0	-
Q2	0.3	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	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	0.0	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	0.4	0.1	0.0	0.1	0.3	0.2	0.0	-
2016	1.7	0.0	0.3	0.1	0.5	0.2	0.0	0.1	0.3	0.2	0.0	-
2016 Q1	1.5	0.0	0.3	0.1	0.4	0.1	0.0	0.1	0.3	0.2	0.0	-
Q2	1.6	0.0	0.2	0.1	0.4	0.1	0.0	0.1	0.4	0.2	0.0	-
Q3	1.7	0.0	0.2	0.1	0.4	0.2	0.0	0.1	0.3	0.2	0.0	-
Q4	1.8	0.0	0.4	0.1	0.5	0.2	0.0	0.1	0.3	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-employment, % of labour force [1]	Unemployment											Job vacancy rate [2]
			Total		Long-term unemployment, % 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	% of total posts
	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	18.635	11.6	6.1	15.215	10.4	3.420	23.7	9.929	11.5	8.706	11.8	1.5
2015	160.600	4.6	17.441	10.9	5.6	14.292	9.8	3.149	22.3	9.252	10.7	8.189	11.0	1.5
2016	161.974	4.3	16.226	10.0	5.0	13.275	9.0	2.951	20.9	8.471	9.7	7.755	10.4	1.7
2016 Q1	161.014	4.5	16.629	10.3	5.2	13.616	9.2	3.012	21.5	8.713	10.0	7.916	10.6	1.7
Q2	161.849	4.5	16.424	10.1	5.1	13.432	9.1	2.992	21.1	8.530	9.8	7.894	10.5	1.7
Q3	162.465	4.1	16.082	9.9	4.8	13.164	8.9	2.919	20.6	8.381	9.6	7.702	10.3	1.6
Q4	162.570	4.2	15.767	9.7	4.9	12.887	8.7	2.880	20.4	8.261	9.4	7.506	10.0	1.7
2016 Sep.	-	-	15.995	9.9	-	13.104	8.8	2.891	20.4	8.352	9.6	7.643	10.2	-
Oct.	-	-	15.839	9.8	-	12.967	8.7	2.871	20.3	8.301	9.5	7.538	10.1	-
Nov.	-	-	15.807	9.7	-	12.895	8.7	2.912	20.6	8.299	9.5	7.508	10.0	-
Dec.	-	-	15.656	9.6	-	12.799	8.6	2.856	20.2	8.182	9.4	7.473	10.0	-
2017 Jan.	-	-	15.579	9.6	-	12.791	8.6	2.788	19.8	8.130	9.3	7.449	9.9	-
Feb.	-	-	15.439	9.5	-	12.717	8.6	2.722	19.4	8.053	9.2	7.386	9.8	-

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						Construction production	ECB indicator on industrial new orders	Retail sales				New passenger car registrations
	Total (excluding construction)		Main Industrial Groupings						Total	Food, beverages, tobacco	Non-food	Fuel	
		Manufacturing	Intermediate 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	-5.4	2.0	3.1	1.5	0.7	2.4	0.0	3.8
2015	2.1	2.3	1.0	3.6	2.5	0.8	-0.9	3.6	2.7	1.7	3.6	2.3	8.8
2016	1.4	1.5	1.8	1.7	1.1	0.0	1.9	0.3	1.9	1.3	2.5	1.8	7.2
2016 Q2	1.1	1.1	1.2	1.3	1.0	-0.7	-0.1	-2.4	1.8	0.6	2.7	2.2	8.5
Q3	1.0	1.2	1.6	0.9	1.2	-0.5	3.1	-0.2	1.3	1.3	1.4	2.4	6.4
Q4	2.3	1.8	2.4	1.7	1.1	5.3	2.2	3.3	2.2	1.6	3.0	1.3	4.1
2017 Q1	.	.	.	.	.	.	.	.	.	.	.	.	4.8
2016 Oct.	0.8	0.5	0.9	1.2	-0.7	2.0	1.6	2.6	2.9	2.3	3.8	1.4	4.2
Nov.	3.3	2.9	3.0	3.3	2.4	6.2	0.8	2.4	2.5	1.7	3.5	2.1	4.5
Dec.	2.7	1.9	3.7	0.5	1.8	7.4	3.3	4.9	1.3	0.8	1.9	0.4	3.4
2017 Jan.	0.2	-0.8	0.7	-1.7	-2.5	7.8	-5.1	3.0	1.5	1.1	1.9	1.5	3.7
Feb.	1.2	0.9	2.0	1.2	-1.9	2.4	7.1	5.5	1.8	0.8	2.4	0.5	4.8
Mar.	.	.	.	.	.	.	.	.	.	.	.	.	5.5
month-on-month percentage changes (s.a.)													
2016 Oct.	0.2	0.0	-0.2	1.3	-0.8	1.0	0.5	1.9	1.2	0.2	2.5	-0.7	-3.7
Nov.	1.5	1.6	2.0	0.3	1.7	1.2	1.0	0.5	-0.2	-0.5	-0.2	0.4	2.4
Dec.	-1.1	-1.1	-0.1	-2.7	0.1	-1.1	-0.3	3.1	-0.3	0.0	-0.3	-0.3	2.2
2017 Jan.	0.3	0.1	-0.8	1.6	-1.1	2.0	-2.4	-2.8	0.1	-0.1	0.0	1.2	0.8
Feb.	-0.3	0.2	1.0	0.9	-1.0	-4.7	6.9	1.4	0.7	0.7	0.9	-0.9	0.7
Mar.	.	.	.	.	.	.	.	.	.	.	.	.	-0.3

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

3 Economic activity

3.6 Opinion surveys
(seasonally adjusted)

	European Commission Business and Consumer Surveys (percentage balances, unless otherwise indicated)								Purchasing Managers' Surveys (diffusion indices)			
	Economic sentiment indicator (long-term average = 100)	Manufacturing industry		Consumer confidence indicator	Construction confidence indicator	Retail trade confidence indicator	Service industries		Purchasing Managers' Index (PMI) for manufacturing	Manufacturing output	Business activity for services	Composite output
		Industrial confidence indicator	Capacity utilisation (%)				Services confidence indicator	Capacity utilisation (%)				
	1	2	3	4	5	6	7	8	9	10	11	12
1999-13	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	4.9	87.7	51.8	53.3	52.5	52.7
2015	104.2	-3.1	81.4	-6.2	-22.4	1.6	9.3	88.4	52.2	53.4	54.0	53.8
2016	104.8	-2.6	81.9	-7.7	-16.6	1.5	11.2	89.1	52.5	53.6	53.1	53.3
2016 Q2	104.2	-3.4	81.6	-7.8	-18.4	1.8	11.2	89.0	52.0	53.0	53.1	53.1
Q3	104.2	-2.9	82.0	-8.2	-16.0	0.3	10.3	89.2	52.1	53.7	52.6	52.9
Q4	106.9	-0.6	82.4	-6.4	-13.1	1.8	12.4	89.4	54.0	54.9	53.5	53.8
2017 Q1	107.9	1.1	.	-5.4	-11.0	2.0	13.1	.	55.6	56.9	55.1	55.6
2016 Nov.	106.5	-1.1	-	-6.2	-12.9	1.5	12.2	-	53.7	54.1	53.8	53.9
Dec.	107.8	0.0	-	-5.1	-12.1	3.5	12.9	-	54.9	56.1	53.7	54.4
2017 Jan.	107.9	0.8	82.5	-4.8	-12.9	2.3	12.8	89.4	55.2	56.1	53.7	54.4
Feb.	108.0	1.3	-	-6.2	-10.1	1.8	13.9	-	55.4	57.3	55.5	56.0
Mar.	107.9	1.2	-	-5.0	-9.9	1.8	12.7	-	56.2	57.5	56.0	56.4
Apr.	.	.	-	-3.6	.	.	.	-	56.8	58.0	56.2	56.7

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	130.0	2.2	-0.4	0.8
2014	12.5	94.7	0.7	1.8	1.0	2.7	1.0	33.0	4.9	131.2	2.5	6.8	1.4
2015	12.3	94.1	1.8	2.1	2.5	3.2	2.3	34.5	6.6	133.6	3.9	2.8	2.1
2016 Q1	12.3	93.5	2.4	2.0	3.9	2.0	3.1	34.1	6.8	132.7	3.6	4.3	1.9
Q2	12.5	93.6	2.4	2.4	6.6	3.2	3.6	33.9	7.0	133.9	3.7	3.8	2.0
Q3	12.5	93.5	1.6	2.3	5.7	4.2	3.9	34.0	7.3	132.6	3.6	3.8	1.9
Q4	.	.	1.1	2.1	5.6	4.2	4.4	33.9	7.4	133.1	3.3	8.0	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 Q1	887.3	793.3	94.0	516.1	424.1	196.8	177.2	148.6	135.1	25.8	57.0	9.4	11.0
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
2016 Sep.	303.5	271.9	31.6	176.4	143.6	66.4	59.8	51.5	45.7	9.1	22.8	2.4	1.9
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.	313.0	286.8	26.1	182.8	157.3	67.2	63.5	53.9	42.9	9.1	23.1	2.0	2.2
Feb.	314.2	276.3	37.9	186.7	157.2	68.5	59.0	50.2	45.9	8.8	14.2	2.8	1.6
12-month cumulated transactions													
2017 Feb.	3,654.4	3,294.2	360.2	2,129.5	1,760.8	790.4	740.9	627.0	547.5	107.5	244.9	31.4	30.5
12-month cumulated transactions as a percentage of GDP													
2017 Feb.	34.0	30.7	3.4	19.8	16.4	7.4	6.9	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 Q1	-0.9	-2.5	503.3	233.7	104.9	151.2	422.8	438.1	240.2	72.3	117.1	327.4	37.2
Q2	0.0	-3.6	505.1	231.6	106.2	153.6	425.5	432.9	237.2	72.1	115.8	321.9	41.8
Q3	-0.1	-1.9	508.9	237.1	103.3	154.4	426.6	442.5	243.6	72.0	117.0	327.2	43.8
Q4	2.2	2.2	524.6	244.1	108.3	157.3	439.1	459.7	255.7	74.1	118.8	334.1	50.2
2016 Sep.	2.3	-1.4	170.2	79.9	34.5	51.5	142.7	147.2	81.3	23.7	38.9	108.5	14.2
Oct.	-4.5	-2.9	170.2	79.0	34.7	51.4	141.6	150.4	82.8	24.9	39.4	110.4	16.1
Nov.	5.5	5.2	175.6	82.3	35.1	53.2	146.9	153.5	86.0	24.2	39.7	111.8	16.4
Dec.	6.0	4.6	178.8	82.9	38.6	52.7	150.6	155.8	86.9	25.0	39.7	111.9	17.7
2017 Jan.	12.8	17.0	177.2	84.8	34.8	53.1	146.2	161.5	92.8	25.9	39.4	113.8	20.8
Feb.	4.4	5.3	177.9	.	.	.	148.9	158.7	.	.	.	112.0	.
Volume indices (2000 = 100; annual percentage changes for columns 1 and 2)													
2016 Q1	-0.7	2.9	117.8	115.9	116.2	121.6	116.8	110.0	110.5	106.7	110.5	111.5	110.9
Q2	2.4	5.0	118.1	114.3	117.8	124.0	117.9	108.1	107.0	106.2	111.4	111.1	99.7
Q3	0.7	1.6	118.1	116.0	113.5	124.1	117.3	109.0	107.9	106.0	111.5	112.0	100.6
Q4	1.3	0.6	120.2	117.9	117.9	124.8	119.7	109.5	108.5	106.1	111.3	112.0	105.2
2016 Aug.	9.5	7.7	119.5	116.8	115.3	126.1	118.9	109.5	108.3	109.0	111.7	113.2	99.0
Sep.	2.8	1.0	118.6	117.3	113.7	124.4	117.9	108.5	107.7	103.9	111.1	111.3	97.4
Oct.	-4.9	-2.3	117.9	115.1	113.8	124.1	116.7	109.2	107.7	108.2	111.9	112.4	103.7
Nov.	4.7	4.6	120.8	119.6	115.2	125.9	120.1	110.8	110.8	105.2	111.7	113.0	108.2
Dec.	4.6	-0.3	121.9	118.9	124.8	124.3	122.3	108.6	107.1	104.8	110.4	110.7	103.7
2017 Jan.	8.9	6.2	119.6	119.8	113.3	123.8	117.8	109.8	110.9	108.2	107.1	111.2	112.8

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	Unpro-cessed food	Non-energy industrial goods	Energy (n.s.a.)	Services	Total HICP excluding administered prices	Adminis-tered 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	0.8	0.1	2.0	0.3	-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	0.2	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 Oct.	100.9	0.5	0.8	0.1	1.1	0.2	0.1	0.0	0.0	1.6	0.1	0.6	0.2
Nov.	100.8	0.6	0.8	0.2	1.1	0.0	0.2	0.1	0.0	-0.2	0.0	0.6	0.3
Dec.	101.3	1.1	0.9	1.0	1.3	0.4	0.1	0.7	0.0	1.8	0.2	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

	Goods						Services					
	Food (including alcoholic beverages and tobacco)			Industrial goods			Housing		Transport	Communi-cation	Recreation and personal	Miscel-laneous
	Total	Processed food	Unpro-cessed 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 Oct.	0.4	0.5	0.2	-0.1	0.3	-0.9	1.1	1.2	1.0	0.0	1.2	1.1
Nov.	0.7	0.7	0.7	-0.1	0.3	-1.1	1.2	1.2	1.1	-0.1	1.1	1.2
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

Sources: Eurostat and ECB calculations.

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

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

4 Prices and costs

4.2 Industry, construction and property prices
(annual percentage changes, unless otherwise indicated)

	Industrial producer prices excluding construction [1]										Con-struction	Residential property prices [2]	Experimental indicator of commercial property prices [2]
	Total (index: 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	-0.2	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	-1.0	0.2	-8.2	0.2	1.6	4.5
2016	101.6	-2.3	-1.5	-0.5	-1.7	0.4	0.0	-0.1	0.1	-6.9	0.4	3.3	5.4
2016 Q1	100.6	-3.7	-2.7	-0.9	-2.2	0.4	-0.4	-0.5	0.0	-11.1	-0.2	2.8	5.4
Q2	100.9	-3.8	-2.8	-1.1	-2.7	0.4	-0.5	-0.8	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	-0.1	0.1	-5.9	0.4	3.4	8.8
Q4	103.1	0.4	1.0	0.4	0.0	0.5	0.8	1.2	0.1	0.4	1.1	3.8	4.3
2016 Sep.	101.9	-1.5	-0.7	-0.3	-1.4	0.4	0.1	0.2	0.1	-4.5	-	-	-
Oct.	102.6	-0.5	0.3	0.0	-0.8	0.5	0.6	0.6	0.2	-1.6	-	-	-
Nov.	102.9	0.0	0.5	0.4	0.1	0.5	0.7	1.1	0.1	-0.8	-	-	-
Dec.	103.7	1.6	2.3	0.9	0.8	0.6	1.1	1.7	0.0	3.8	-	-	-
2017 Jan.	104.8	3.9	3.7	1.5	2.2	0.7	1.5	2.1	0.2	10.5	-	-	-
Feb.	104.8	4.5	4.4	2.1	3.3	0.8	1.7	2.5	0.2	11.4	-	-	-

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	0.9	0.6	-0.7	-1.5	74.1	-3.4	2.0	-8.5	-0.4	4.6	-6.4
2015	105.8	1.1	0.3	0.1	0.5	0.7	0.1	-1.9	47.1	0.0	4.2	-4.5	2.9	7.0	-2.7
2016	106.7	0.9	0.5	0.4	0.8	0.8	-1.3	-2.4	39.9	-3.5	-3.9	-3.2	-7.3	-10.3	-2.9
2016 Q2	106.5	0.9	0.2	0.1	0.7	0.7	-2.4	-4.1	40.8	-9.0	-5.7	-12.5	-12.5	-12.6	-12.3
Q3	106.7	0.9	0.6	0.3	0.8	0.8	-1.5	-2.2	41.0	-0.5	-2.1	1.4	-5.8	-10.6	1.3
Q4	107.2	0.8	0.9	0.7	0.8	1.2	0.0	0.1	46.5	9.1	1.1	18.6	3.3	-6.7	18.5
2017 Q1	.	.	.	.	.	.	.	.	50.8	18.3	5.9	33.2	13.0	0.1	32.4
2016 Oct.	-	-	-	-	-	-	-	-	45.1	3.1	-0.3	7.1	-2.9	-10.3	8.3
Nov.	-	-	-	-	-	-	-	-	43.1	8.5	-0.1	19.0	2.4	-8.1	18.7
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

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	34.0	57.7	56.7	-	49.9
2014	-0.9	-1.5	0.9	-17.4	14.2	49.6	53.5	49.7	48.2
2015	-2.8	1.3	2.6	-13.2	-1.2	48.9	53.5	49.6	49.0
2016	-0.4	1.7	4.4	-7.3	-0.7	49.8	53.9	49.3	49.6
2016 Q2	-1.0	1.9	4.6	-8.1	-2.2	47.5	54.4	48.5	49.0
Q3	-0.2	1.0	4.5	-6.6	-0.3	51.4	54.0	49.6	49.8
Q4	4.6	3.1	4.9	-5.4	1.6	58.6	54.9	51.6	50.5
2017 Q1	9.0	5.5	6.4	-3.7	12.0	67.8	56.7	55.0	51.4
2016 Nov.	4.9	2.8	5.3	-6.0	1.8	58.8	54.4	51.4	50.3
Dec.	5.4	4.0	4.9	-5.1	2.8	63.2	56.0	52.5	51.4
2017 Jan.	8.3	4.9	6.7	-5.1	8.3	67.0	56.4	54.0	50.9
Feb.	9.0	6.3	6.4	-3.1	12.9	68.3	56.9	55.4	51.1
Mar.	9.8	5.2	6.1	-2.9	14.9	68.1	56.8	55.6	52.2
Apr.	.	.	.	.	.	67.4	57.2	55.6	52.0

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 Q1	98.9	1.6	1.6	1.4	1.5	1.7	1.4
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

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	104.6	0.7	-1.0	-0.7	1.1	0.6	-0.6	2.1	1.8	1.2	1.6	1.4
2015	104.8	0.3	1.0	-2.3	1.0	0.6	0.7	0.6	3.5	1.8	1.1	1.9
2016	105.7	0.8	2.3	0.1	-0.4	0.6	0.1	1.1	4.0	1.2	1.6	1.7
2016 Q1	105.5	1.0	1.1	0.3	-0.1	0.7	0.9	1.2	4.4	2.1	1.6	2.7
Q2	105.6	0.9	2.0	0.2	-0.5	1.0	0.3	1.4	3.7	0.9	1.6	1.5
Q3	105.9	0.8	2.4	0.5	-0.8	0.6	-0.5	1.1	3.7	0.7	1.6	1.4
Q4	106.2	0.9	4.0	-0.3	-0.2	0.5	-0.2	0.7	4.2	1.5	1.6	1.4
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	101.9	0.6	1.2	2.8	0.6	0.5	2.8	-0.4	-0.3	0.4	-0.5	-0.4
2015	102.9	1.0	0.4	4.1	-0.2	0.9	1.7	0.0	-0.9	-0.2	0.0	-0.9
2016	103.4	0.5	-1.5	1.0	1.8	0.7	1.1	0.3	-0.6	0.1	-0.1	0.4
2016 Q1	103.3	0.3	-0.4	1.0	1.4	0.6	0.3	0.5	-0.8	-0.6	-0.3	-0.6
Q2	103.2	0.2	-1.0	0.6	1.8	0.3	0.9	-0.4	-0.2	0.4	-0.3	0.2
Q3	103.5	0.5	-2.1	0.7	2.3	0.6	1.6	0.5	-0.8	0.4	0.0	0.9
Q4	103.7	0.6	-2.8	1.6	1.8	0.9	1.5	0.6	-0.7	0.1	0.1	1.1
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	104.1	0.7	1.8	2.4	0.3	0.8	2.8	-0.3	-0.1	0.3	-0.6	-0.1
2015	105.0	0.9	-0.6	3.7	-0.9	1.1	0.6	-0.1	-1.4	-0.3	-0.1	-0.9
2016	105.7	0.6	-1.8	0.9	2.0	0.8	1.3	0.1	-0.5	0.1	0.2	0.7
2016 Q1	105.3	0.3	-1.8	0.7	1.0	0.5	0.0	0.3	-0.7	-1.0	0.0	-0.3
Q2	105.1	0.2	-2.0	0.3	1.6	0.2	0.7	-1.1	-0.9	-0.1	0.2	0.4
Q3	105.6	0.8	-1.9	0.8	2.6	0.6	2.0	0.5	-0.3	0.8	0.5	1.5
Q4	106.0	0.9	-2.3	1.4	2.8	1.3	2.1	0.7	-0.1	0.5	0.2	1.5

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	2,149.8	3,731.5	9,671.4	121.5	422.2	107.0	650.7	10,322.1
2015	1,036.5	5,566.3	6,602.8	1,439.2	2,161.8	3,601.0	10,203.8	74.6	479.0	73.6	627.2	10,831.1
2016	1,073.1	6,117.1	7,190.2	1,320.9	2,175.8	3,496.7	10,686.9	70.4	521.5	96.4	688.4	11,375.2
2016 Q1	1,049.6	5,711.9	6,761.6	1,421.0	2,164.8	3,585.8	10,347.3	85.3	465.5	94.9	645.8	10,993.1
Q2	1,054.6	5,821.2	6,875.8	1,411.0	2,171.9	3,582.9	10,458.7	84.2	481.7	94.8	660.7	11,119.4
Q3	1,066.6	5,946.7	7,013.3	1,393.3	2,174.5	3,567.8	10,581.1	80.5	496.0	93.8	670.2	11,251.3
Q4	1,073.1	6,117.1	7,190.2	1,320.9	2,175.8	3,496.7	10,686.9	70.4	521.5	96.4	688.4	11,375.2
2016 Sep.	1,066.6	5,946.7	7,013.3	1,393.3	2,174.5	3,567.8	10,581.1	80.5	496.0	93.8	670.2	11,251.3
Oct.	1,072.4	5,981.7	7,054.1	1,361.2	2,175.0	3,536.2	10,590.3	74.4	503.7	91.4	669.5	11,259.8
Nov.	1,075.2	6,069.9	7,145.1	1,350.4	2,171.9	3,522.4	10,667.5	72.5	506.1	98.7	677.3	11,344.7
Dec.	1,073.1	6,117.1	7,190.2	1,320.9	2,175.8	3,496.7	10,686.9	70.4	521.5	96.4	688.4	11,375.2
2017 Jan.	1,081.8	6,154.9	7,236.7	1,329.9	2,178.1	3,508.0	10,744.7	75.1	515.5	98.2	688.9	11,433.6
Feb. [(p)]	1,086.2	6,208.6	7,294.8	1,326.1	2,178.0	3,504.1	10,798.9	66.8	507.1	98.7	672.6	11,471.5
Transactions												
2014	59.0	374.9	433.9	-91.8	3.7	-88.1	345.8	3.6	10.4	13.3	27.3	373.1
2015	65.9	562.6	628.5	-135.4	12.2	-123.2	505.3	-48.0	51.4	-26.3	-22.9	482.5
2016	36.7	544.6	581.3	-107.9	16.0	-91.9	489.4	-4.3	42.3	17.6	55.7	545.1
2016 Q1	13.3	156.1	169.4	-14.0	3.1	-10.9	158.6	11.2	-13.4	19.2	17.0	175.6
Q2	5.0	104.4	109.3	-12.7	7.2	-5.5	103.8	-1.4	15.5	-1.4	12.7	116.6
Q3	12.0	127.9	139.9	-15.7	2.3	-13.4	126.5	-3.7	14.7	-2.4	8.6	135.2
Q4	6.5	156.2	162.6	-65.5	3.4	-62.1	100.5	-10.4	25.5	2.1	17.3	117.8
2016 Sep.	5.0	25.1	30.2	0.6	0.3	0.9	31.0	-1.8	15.0	-5.1	8.1	39.1
Oct.	5.9	28.4	34.2	-25.0	0.7	-24.3	9.9	-6.2	7.7	-3.8	-2.3	7.7
Nov.	2.8	81.3	84.0	-12.8	-1.2	-14.0	70.0	-2.1	2.4	8.1	8.4	78.3
Dec.	-2.1	46.5	44.4	-27.7	3.9	-23.8	20.6	-2.1	15.4	-2.1	11.2	31.8
2017 Jan.	8.7	41.5	50.3	11.6	2.2	13.8	64.1	4.8	-6.0	1.1	-0.1	64.0
Feb. [(p)]	4.3	50.3	54.6	-4.4	-0.1	-4.6	50.0	-8.4	-8.4	0.3	-16.6	33.5
Growth rates												
2014	6.5	8.4	8.0	-5.4	0.2	-2.3	3.7	2.9	2.5	19.9	4.4	3.8
2015	6.8	11.3	10.5	-8.6	0.6	-3.3	5.2	-39.1	12.0	-25.3	-3.5	4.7
2016	3.5	9.8	8.8	-7.5	0.7	-2.6	4.8	-5.8	8.8	23.7	8.8	5.0
2016 Q1	6.0	11.1	10.3	-6.2	0.6	-2.2	5.6	-25.9	6.6	-1.1	-0.4	5.2
Q2	4.0	9.7	8.8	-4.1	0.6	-1.3	5.1	1.1	9.2	-3.0	6.1	5.1
Q3	3.7	9.3	8.4	-3.3	0.5	-1.0	5.0	-12.8	8.4	13.6	5.9	5.1
Q4	3.5	9.8	8.8	-7.5	0.7	-2.6	4.8	-5.8	8.8	23.7	8.8	5.0
2016 Sep.	3.7	9.3	8.4	-3.3	0.5	-1.0	5.0	-12.8	8.4	13.6	5.9	5.1
Oct.	4.0	8.8	8.0	-4.7	0.6	-1.5	4.6	-27.3	6.8	13.6	2.2	4.5
Nov.	3.8	9.4	8.5	-5.5	0.6	-1.9	4.9	-15.8	4.9	12.1	3.1	4.8
Dec.	3.5	9.8	8.8	-7.5	0.7	-2.6	4.8	-5.8	8.8	23.7	8.8	5.0
2017 Jan.	3.6	9.3	8.4	-6.7	0.8	-2.2	4.7	-7.3	8.9	12.0	7.3	4.8
Feb. [(p)]	3.9	9.2	8.4	-6.2	0.7	-2.1	4.8	-24.3	8.1	6.8	3.5	4.7

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	1,845.1	1,349.1	365.1	111.6	19.4	5,557.7	2,749.5	812.1	1,993.2	2.8	865.5	222.2	332.9
2015	1,930.5	1,483.9	321.7	116.4	8.4	5,750.9	3,059.7	695.1	1,993.7	2.4	970.1	225.8	364.7
2016	2,056.1	1,636.6	293.9	117.0	8.6	6,049.7	3,399.7	643.6	2,004.8	1.7	1,001.3	196.5	380.6
2016 Q1	1,984.8	1,536.6	322.7	116.0	9.4	5,829.7	3,137.1	693.6	1,996.3	2.7	973.7	218.9	375.9
Q2	2,013.7	1,574.3	314.0	117.1	8.4	5,906.0	3,214.2	688.8	2,000.0	3.0	978.0	210.7	379.9
Q3	2,047.5	1,602.5	317.8	118.1	9.1	5,979.5	3,301.8	672.0	2,003.1	2.6	975.5	206.2	386.3
Q4	2,056.1	1,636.6	293.9	117.0	8.6	6,049.7	3,399.7	643.6	2,004.8	1.7	1,001.3	196.5	380.6
2016 Sep.	2,047.5	1,602.5	317.8	118.1	9.1	5,979.5	3,301.8	672.0	2,003.1	2.6	975.5	206.2	386.3
Oct.	2,037.3	1,604.6	307.6	118.1	7.0	6,001.8	3,334.4	660.0	2,004.6	2.8	953.4	206.5	393.2
Nov.	2,064.6	1,634.0	305.1	117.1	8.5	6,029.6	3,372.2	652.0	2,002.9	2.5	981.1	206.3	383.1
Dec.	2,056.1	1,636.6	293.9	117.0	8.6	6,049.7	3,399.7	643.6	2,004.8	1.7	1,001.3	196.5	380.6
2017 Jan.	2,099.5	1,677.2	299.3	116.0	7.0	6,087.9	3,438.6	636.1	2,010.5	2.7	963.1	194.6	392.9
Feb. [(p)]	2,120.5	1,695.9	301.8	116.0	6.8	6,112.3	3,469.4	628.0	2,012.0	2.8	959.5	195.4	391.9
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	81.8	121.7	-33.5	4.9	-11.2	193.4	303.0	-109.9	0.8	-0.4	86.1	-0.1	30.3
2016	128.9	152.8	-24.1	0.0	0.2	301.4	335.5	-46.8	13.4	-0.8	30.4	-29.3	17.1
2016 Q1	61.2	57.8	2.7	-0.4	1.1	80.9	78.5	-0.6	2.8	0.3	8.8	-6.5	12.1
Q2	27.3	36.3	-8.9	1.0	-1.1	75.5	76.2	-5.1	4.0	0.4	-0.5	-8.5	3.7
Q3	34.8	29.5	4.0	0.6	0.7	73.7	87.7	-16.6	3.1	-0.5	0.4	-4.2	6.2
Q4	5.6	29.2	-21.9	-1.3	-0.5	71.3	93.1	-24.4	3.5	-0.9	21.7	-10.0	-4.9
2016 Sep.	15.7	6.8	7.8	0.7	0.4	18.7	24.6	-5.5	-0.1	-0.2	-3.4	-7.0	0.2
Oct.	-9.3	0.6	-7.8	-0.1	-2.1	23.4	29.1	-7.3	1.4	0.2	-23.9	0.2	7.5
Nov.	23.8	26.4	-3.0	-1.1	1.5	28.1	36.8	-8.6	0.2	-0.3	23.7	-0.4	-10.1
Dec.	-8.9	2.2	-11.1	-0.1	0.1	19.8	27.3	-8.5	1.9	-0.8	21.9	-9.8	-2.4
2017 Jan.	46.0	42.4	6.2	-1.0	-1.6	38.9	39.5	-7.3	5.6	1.0	-35.3	-1.8	12.3
Feb. [(p)]	19.5	17.2	2.5	0.0	-0.2	23.3	30.3	-8.7	1.5	0.1	-5.7	0.7	-0.5
Growth rates													
2014	4.0	7.6	-6.7	1.3	15.9	2.6	8.2	-7.4	-0.1	-37.8	6.5	3.9	7.0
2015	4.4	9.0	-9.4	4.4	-57.4	3.5	11.0	-13.6	0.0	-15.1	9.8	0.0	9.1
2016	6.7	10.3	-7.6	0.0	2.2	5.2	11.0	-6.8	0.7	-31.2	3.1	-13.0	4.7
2016 Q1	7.4	11.0	-4.5	3.8	-31.3	4.2	10.7	-8.8	0.2	-30.6	6.2	-3.3	10.3
Q2	8.0	11.1	-2.9	3.9	-27.8	4.6	10.4	-5.9	0.1	0.3	4.2	-8.5	10.3
Q3	7.4	9.9	-1.3	1.7	-8.5	5.1	10.6	-4.9	0.4	-18.2	1.1	-5.7	7.7
Q4	6.7	10.3	-7.6	0.0	2.2	5.2	11.0	-6.8	0.7	-31.2	3.1	-13.0	4.7
2016 Sep.	7.4	9.9	-1.3	1.7	-8.5	5.1	10.6	-4.9	0.4	-18.2	1.1	-5.7	7.7
Oct.	5.5	7.9	-2.8	0.9	-29.6	5.2	10.7	-5.5	0.6	-19.8	-1.0	-9.4	7.8
Nov.	7.1	10.1	-3.7	-0.1	-5.3	5.4	11.1	-6.0	0.7	-32.6	0.5	-8.0	3.1
Dec.	6.7	10.3	-7.6	0.0	2.2	5.2	11.0	-6.8	0.7	-31.2	3.1	-13.0	4.7
2017 Jan.	7.1	10.5	-5.4	-0.2	-26.8	5.5	11.4	-7.8	0.9	-19.6	-1.0	-13.5	5.6
Feb. [(p)]	7.6	10.9	-4.6	-0.5	-26.6	5.4	11.5	-8.9	0.9	-4.4	-2.0	-15.4	5.3

Source: ECB.

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

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

3) Including non-profit institutions serving households.

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

5 Money and credit

5.3 Credit to euro area residents [1)]

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

	Credit to general government			Credit to other euro area residents								
	Total	Loans	Debt securities	Total	Loans						Debt securities	Equity and non-money market fund investment fund shares
					Total		To non-financial corporations [3)]	To households [4)]	To financial corporations other than MFIs and ICPFs [3)]	To insurance corporations and pension funds		
						Adjusted loans [2)]						
	1	2	3	4	5	6	7	8	9	10	11	12
Outstanding amounts												
2014	3,615.6	1,135.0	2,478.5	12,504.8	10,454.5	10,726.7	4,299.6	5,200.7	825.1	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	4,274.5	5,307.6	806.3	123.5	1,305.1	782.3
2016	4,397.5	1,082.0	3,302.3	12,844.9	10,673.5	10,981.2	4,300.9	5,409.3	850.8	112.5	1,385.2	786.2
2016 Q1	4,053.6	1,115.9	2,924.6	12,629.6	10,561.2	10,824.5	4,288.8	5,338.9	824.8	108.8	1,312.2	756.2
Q2	4,191.8	1,112.5	3,066.2	12,664.0	10,566.1	10,870.4	4,297.1	5,348.3	816.8	103.9	1,342.5	755.4
Q3	4,272.2	1,105.2	3,153.6	12,769.1	10,623.5	10,927.4	4,289.6	5,379.3	845.5	109.1	1,365.2	780.5
Q4	4,397.5	1,082.0	3,302.3	12,844.9	10,673.5	10,981.2	4,300.9	5,409.3	850.8	112.5	1,385.2	786.2
2016 Sep.	4,272.2	1,105.2	3,153.6	12,769.1	10,623.5	10,927.4	4,289.6	5,379.3	845.5	109.1	1,365.2	780.5
Oct.	4,291.1	1,099.6	3,178.1	12,810.3	10,656.5	10,956.9	4,302.9	5,388.3	850.8	114.5	1,373.1	780.7
Nov.	4,320.9	1,092.5	3,215.0	12,851.3	10,699.4	10,981.8	4,321.0	5,407.2	855.3	115.9	1,379.0	772.9
Dec.	4,397.5	1,082.0	3,302.3	12,844.9	10,673.5	10,981.2	4,300.9	5,409.3	850.8	112.5	1,385.2	786.2
2017 Jan.	4,388.7	1,087.3	3,287.7	12,886.4	10,696.3	10,995.5	4,316.3	5,422.6	842.8	114.6	1,404.0	786.1
Feb. [(p)]	4,405.0	1,073.2	3,318.0	12,916.1	10,719.6	11,011.8	4,323.0	5,443.4	841.6	111.6	1,403.6	792.9
Transactions												
2014	73.8	16.4	57.4	-102.0	-47.1	-33.3	-61.1	-14.9	17.2	11.7	-89.8	35.0
2015	284.9	-21.1	305.7	86.7	58.1	73.2	-13.1	98.2	-21.4	-5.7	25.1	3.5
2016	458.8	-34.9	493.6	318.4	232.5	251.0	81.6	119.3	42.7	-11.1	80.6	5.2
2016 Q1	120.0	1.5	118.5	69.3	79.3	52.2	35.9	36.2	21.8	-14.6	11.0	-21.0
Q2	116.4	-8.9	125.2	54.8	22.1	64.6	19.5	14.5	-6.9	-5.0	31.1	1.6
Q3	69.3	-7.3	76.3	113.3	70.3	72.1	6.6	33.8	24.8	5.2	20.9	22.1
Q4	153.2	-20.3	173.6	81.0	60.9	62.0	19.7	34.8	3.1	3.3	17.6	2.6
2016 Sep.	12.2	-2.6	14.8	24.2	20.7	22.2	-1.3	14.7	8.7	-1.4	1.2	2.3
Oct.	38.8	-5.5	44.3	44.0	33.7	29.9	16.0	7.2	5.0	5.5	7.7	2.6
Nov.	45.3	-7.0	52.3	36.3	37.6	20.6	16.1	18.9	1.3	1.3	5.5	-6.8
Dec.	69.0	-7.8	77.0	0.6	-10.4	11.4	-12.4	8.7	-3.2	-3.5	4.3	6.7
2017 Jan.	16.2	5.3	10.5	54.2	31.0	24.8	18.4	14.5	-4.0	2.1	19.5	3.7
Feb. [(p)]	8.0	-13.0	20.9	23.4	19.9	12.5	5.1	19.9	-2.2	-3.0	-1.2	4.7
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	-2.6	-4.4	2.0	0.4
2016	11.7	-3.1	17.6	2.5	2.2	2.3	1.9	2.3	5.3	-9.0	6.2	0.7
2016 Q1	10.2	-2.8	16.1	1.2	1.2	1.1	0.9	2.2	0.1	-19.2	3.1	-2.3
Q2	11.7	-2.8	18.1	1.5	1.2	1.6	1.3	1.9	0.3	-23.6	7.2	-2.9
Q3	10.1	-2.5	15.3	2.0	1.9	2.1	1.5	2.1	4.9	-10.7	3.5	0.8
Q4	11.7	-3.1	17.6	2.5	2.2	2.3	1.9	2.3	5.3	-9.0	6.2	0.7
2016 Sep.	10.1	-2.5	15.3	2.0	1.9	2.1	1.5	2.1	4.9	-10.7	3.5	0.8
Oct.	10.6	-2.6	16.0	2.3	2.0	2.2	1.7	1.9	5.6	-7.8	5.4	0.5
Nov.	10.7	-3.0	16.3	2.4	2.1	2.2	1.8	2.1	4.2	-6.7	7.4	-0.7
Dec.	11.7	-3.1	17.6	2.5	2.2	2.3	1.9	2.3	5.3	-9.0	6.2	0.7
2017 Jan.	10.5	-2.9	15.8	2.7	2.2	2.4	1.8	2.4	4.5	-8.6	7.1	2.6
Feb. [(p)]	9.8	-3.9	15.1	2.6	2.0	2.3	1.5	2.4	3.8	-11.4	6.7	3.6

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	4,299.6	4,253.9	1,109.8	720.7	2,469.1	5,200.7	5,546.1	563.5	3,860.9	776.4
2015	4,274.5	4,257.7	1,038.4	758.5	2,477.6	5,307.6	5,640.6	595.9	3,948.4	763.3
2016	4,300.9	4,301.7	997.3	796.3	2,507.3	5,409.3	5,725.9	616.5	4,042.5	750.3
2016 Q1	4,288.8	4,261.6	1,048.5	768.6	2,471.6	5,338.9	5,659.1	602.6	3,974.9	761.4
Q2	4,297.1	4,278.6	1,040.4	774.9	2,481.8	5,348.3	5,683.5	604.1	3,986.3	757.9
Q3	4,289.6	4,279.7	1,009.4	786.9	2,493.3	5,379.3	5,701.1	608.5	4,018.2	752.6
Q4	4,300.9	4,301.7	997.3	796.3	2,507.3	5,409.3	5,725.9	616.5	4,042.5	750.3
2016 Sep.	4,289.6	4,279.7	1,009.4	786.9	2,493.3	5,379.3	5,701.1	608.5	4,018.2	752.6
Oct.	4,302.9	4,288.6	1,022.9	787.3	2,492.7	5,388.3	5,712.5	612.8	4,019.3	756.2
Nov.	4,321.0	4,298.0	1,030.8	794.8	2,495.3	5,407.2	5,723.1	614.9	4,035.8	756.5
Dec.	4,300.9	4,301.7	997.3	796.3	2,507.3	5,409.3	5,725.9	616.5	4,042.5	750.3
2017 Jan.	4,316.3	4,310.3	1,012.2	798.1	2,506.0	5,422.6	5,743.3	620.7	4,052.2	749.8
Feb. [(p)]	4,323.0	4,314.7	1,010.6	796.8	2,515.6	5,443.4	5,756.7	623.5	4,072.3	747.7
Transactions										
2014	-61.1	-68.4	-14.2	2.3	-49.2	-14.9	5.6	-3.0	-3.2	-8.7
2015	-13.1	21.1	-64.3	32.4	18.9	98.2	76.1	21.9	79.9	-3.6
2016	81.6	96.9	-17.5	45.2	54.0	119.3	111.2	23.7	105.9	-10.4
2016 Q1	35.9	28.1	19.2	13.2	3.5	36.2	24.7	8.0	28.6	-0.4
Q2	19.5	28.5	-4.1	8.6	15.0	14.5	29.5	1.6	13.5	-0.6
Q3	6.6	10.8	-23.1	14.9	14.8	33.8	27.4	5.1	32.5	-3.8
Q4	19.7	29.5	-9.4	8.5	20.6	34.8	29.6	9.0	31.4	-5.6
2016 Sep.	-1.3	1.9	-11.8	5.8	4.7	14.7	9.9	1.3	14.8	-1.5
Oct.	16.0	11.3	13.3	0.9	1.8	7.2	9.7	4.4	4.5	-1.7
Nov.	16.1	8.3	6.7	6.9	2.6	18.9	10.8	2.2	16.1	0.6
Dec.	-12.4	9.9	-29.4	0.7	16.3	8.7	9.1	2.4	10.8	-4.5
2017 Jan.	18.4	13.2	15.9	2.0	0.6	14.5	19.1	4.6	9.9	0.0
Feb. [(p)]	5.1	2.7	-1.8	-1.1	8.1	19.9	12.3	1.7	18.6	-0.5
Growth rates										
2014	-1.4	-1.5	-1.3	0.3	-1.9	-0.3	0.1	-0.5	-0.1	-1.1
2015	-0.3	0.5	-5.8	4.5	0.8	1.9	1.4	3.9	2.1	-0.5
2016	1.9	2.3	-1.7	6.0	2.2	2.3	2.0	4.0	2.7	-1.4
2016 Q1	0.9	1.2	-2.1	5.2	0.9	2.2	1.6	5.0	2.3	-0.4
Q2	1.3	1.9	-2.1	5.3	1.6	1.9	1.8	3.5	2.1	-0.4
Q3	1.5	2.1	-2.9	6.7	1.8	2.1	1.8	3.4	2.4	-0.9
Q4	1.9	2.3	-1.7	6.0	2.2	2.3	2.0	4.0	2.7	-1.4
2016 Sep.	1.5	2.1	-2.9	6.7	1.8	2.1	1.8	3.4	2.4	-0.9
Oct.	1.7	2.2	-1.1	5.6	1.8	1.9	1.8	3.7	2.2	-1.1
Nov.	1.8	2.1	-1.8	6.6	1.9	2.1	1.9	3.6	2.5	-1.2
Dec.	1.9	2.3	-1.7	6.0	2.2	2.3	2.0	4.0	2.7	-1.4
2017 Jan.	1.8	2.3	-1.8	5.5	2.1	2.4	2.2	4.6	2.8	-1.2
Feb. [(p)]	1.5	2.0	-2.1	4.0	2.3	2.4	2.3	4.1	2.9	-1.3

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	7,127.8	2,186.6	92.2	2,388.1	2,460.8	1,381.1	217.8	184.5	139.7
2015	284.8	6,996.4	2,119.7	79.8	2,254.0	2,543.0	1,343.8	264.9	205.9	135.6
2016	318.0	6,919.1	2,054.4	70.6	2,140.8	2,653.3	1,131.5	238.4	205.9	121.6
2016 Q1	314.7	6,962.3	2,113.6	76.9	2,179.5	2,592.3	1,293.8	293.1	247.1	152.1
Q2	319.3	7,006.3	2,094.1	74.6	2,175.8	2,661.8	1,292.4	296.8	238.0	144.0
Q3	310.1	6,960.6	2,068.5	72.4	2,125.1	2,694.6	1,196.1	284.6	209.2	129.1
Q4	318.0	6,919.1	2,054.4	70.6	2,140.8	2,653.3	1,131.5	238.4	205.9	121.6
2016 Sep.	310.1	6,960.6	2,068.5	72.4	2,125.1	2,694.6	1,196.1	284.6	209.2	129.1
Oct.	324.1	6,950.9	2,071.2	72.4	2,123.5	2,683.9	1,138.4	295.1	193.0	133.7
Nov.	296.6	6,934.5	2,061.6	71.9	2,136.6	2,664.4	1,108.9	294.7	194.7	121.3
Dec.	318.0	6,919.1	2,054.4	70.6	2,140.8	2,653.3	1,131.5	238.4	205.9	121.6
2017 Jan.	302.8	6,875.2	2,037.8	69.8	2,127.8	2,639.8	1,110.9	225.5	176.5	106.3
Feb. [(p)]	295.1	6,921.5	2,026.3	69.6	2,129.3	2,696.3	1,101.4	265.5	171.4	104.4
Transactions										
2014	-4.0	-165.5	-120.8	2.0	-154.5	107.8	237.7	-5.9	0.7	17.8
2015	9.2	-221.6	-106.2	-13.5	-209.3	107.3	-86.5	-15.1	21.4	-4.0
2016	30.2	-148.1	-72.5	-9.1	-120.6	54.1	-282.6	-67.4	12.8	-12.0
2016 Q1	29.4	-56.6	-3.5	-2.8	-45.9	-4.4	-74.8	33.9	41.3	17.3
Q2	4.2	-13.0	-22.3	-1.8	-15.9	27.1	-66.6	3.2	-9.2	-8.1
Q3	-9.2	-53.8	-25.8	-2.0	-41.5	15.5	-98.2	-12.2	-19.2	-13.7
Q4	5.8	-24.8	-20.8	-2.6	-17.3	16.0	-43.0	-92.4	-0.2	-7.5
2016 Sep.	-8.7	-21.3	-9.4	-0.6	-15.8	4.4	-10.2	-17.2	3.4	-4.3
Oct.	13.1	0.8	-1.3	-0.8	-8.7	11.6	-53.2	-8.1	-13.1	4.7
Nov.	-27.6	-10.3	-11.7	-0.5	-5.4	7.3	-12.5	-28.6	1.7	-12.4
Dec.	20.3	-15.4	-7.8	-1.3	-3.3	-2.9	22.7	-55.6	11.2	0.3
2017 Jan.	-15.6	-27.5	-10.3	-0.8	-5.5	-10.8	2.6	-52.1	-28.3	-14.7
Feb. [(p)]	-8.2	11.7	-12.7	-0.2	-6.7	31.4	-44.0	49.6	-5.1	-2.0
Growth rates										
2014	-1.6	-2.2	-5.1	2.2	-6.1	4.5	-	-	0.4	14.6
2015	3.6	-3.1	-4.8	-14.5	-8.6	4.3	-	-	11.6	-2.9
2016	10.6	-2.1	-3.4	-11.5	-5.4	2.1	-	-	6.3	-9.0
2016 Q1	11.0	-3.3	-3.5	-15.2	-8.4	2.0	-	-	3.8	-5.9
Q2	20.1	-2.3	-2.9	-13.3	-6.8	2.8	-	-	3.6	-2.9
Q3	5.3	-2.5	-4.3	-12.2	-6.4	2.7	-	-	1.5	-8.2
Q4	10.6	-2.1	-3.4	-11.5	-5.4	2.1	-	-	6.3	-9.0
2016 Sep.	5.3	-2.5	-4.3	-12.2	-6.4	2.7	-	-	1.5	-8.2
Oct.	-7.2	-2.1	-3.4	-11.8	-6.0	2.8	-	-	4.5	-6.3
Nov.	0.1	-2.1	-3.2	-10.7	-5.9	2.5	-	-	-4.9	-15.6
Dec.	10.6	-2.1	-3.4	-11.5	-5.4	2.1	-	-	6.3	-9.0
2017 Jan.	-1.4	-2.1	-3.5	-11.3	-4.8	1.6	-	-	-12.2	-23.8
Feb. [(p)]	-1.7	-1.7	-4.4	-10.5	-4.0	2.7	-	-	-25.7	-25.7

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	-0.1	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	46.2	45.7	12.6	13.0	15.3	0.5	47.7	44.2	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	47.7	30.3	41.4	9.0	80.2	17.6	29.5	42.1	87.1	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	-1.1	-0.7	-0.3	0.2	0.2	-0.1	0.0	0.1	-0.3	-0.3	-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	1.5	0.5	3.5	2.7	0.8	1.6
2015	14.8	12.8	4.3	2.0	0.5	6.6	2.9	1.2	0.1	3.3	3.0	0.4	1.2
2016	14.3	12.5	4.6	1.8	0.5	6.7	2.6	1.1	-0.1	3.0	2.9	0.2	1.2
2015 Q4	14.8	12.8	4.3	2.0	0.5	6.6	2.9	1.2	0.1	3.3	3.0	0.4	1.2
2016 Q1	15.1	13.2	4.7	1.9	0.5	6.6	2.8	1.2	0.0	3.2	2.8	0.3	1.1
Q2	15.0	13.1	4.8	1.8	0.5	6.7	2.7	1.1	-0.1	3.1	2.9	0.3	1.1
Q3	14.5	12.7	4.0	1.8	0.5	6.8	2.6	1.2	-0.1	3.1	2.8	0.2	1.2
2016 Oct.	14.5	12.7	3.8	1.8	0.5	6.9	2.6	1.1	-0.1	3.0	2.9	0.2	1.3
Nov.	14.6	12.8	4.3	1.8	0.5	6.9	2.6	1.1	-0.1	3.0	2.9	0.2	1.3
Dec.	14.3	12.5	4.6	1.8	0.5	6.9	2.6	1.1	-0.1	3.0	2.9	0.2	1.2
2017 Jan.	14.5	12.7	4.9	1.8	0.5	6.9	2.6	1.1	-0.1	3.0	2.9	0.2	1.2
Feb.	14.1	12.4	4.2	1.7	0.4	7.0	2.6	1.1	-0.2	3.0	2.9	0.2	1.3
Mar.	14.4	12.6	4.3	1.7	0.4	6.9	2.6	1.1	-0.1	3.0	2.9	0.2	1.1

Source: ECB.
1) At face value and not consolidated within the general government sector.
2) Excludes future payments on debt securities not yet outstanding and early redemptions.
3) Residual maturity at the end of the period.
4) Outstanding amounts at the end of the period; transactions as 12-month average.

6 Fiscal developments

6.6 Fiscal developments in euro area countries

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

	Belgium	Germany	Estonia	Ireland	Greece	Spain	France	Italy	Cyprus
	1	2	3	4	5	6	7	8	9
					Government deficit (-)/surplus (+)				
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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