EUROPEAN CENTRAL BANK

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Contents

Update on economic and monetary developments

Summary

Incoming information since the last Governing Council meeting in early December is in line with the Governing Council's baseline scenario of ongoing, but moderate, growth of the euro area economy. In particular, the weakness in the manufacturing sector remains a drag on euro area growth momentum. At the same time, ongoing, albeit decelerating, employment growth and increasing wages continue to support the resilience of the euro area economy. The risks surrounding the euro area growth outlook, related to geopolitical factors, rising protectionism and vulnerabilities in emerging markets, remain tilted to the downside, but have become less pronounced as some of the uncertainty surrounding international trade is receding. While inflation developments remain subdued overall, there are some signs of a moderate increase in underlying inflation in line with expectations. Against this background, the Governing Council kept its monetary policy stance unchanged at its meeting on 23 January 2020. The unfolding monetary policy measures are underpinning favourable financing conditions for all sectors of the economy. In particular, easier borrowing conditions for firms and households are supporting consumer spending and business investment. This will sustain the euro area expansion, the build-up of domestic price pressures and, thus, the robust convergence of inflation to the Governing Council's medium-term aim.

Global economic activity remains moderate, but there are signs of stabilisation. In particular, the global manufacturing sector firmed in the last quarter of 2019, while the services sector remained broadly stable. Global trade remains weak amid signs of stabilisation. A preliminary trade deal between China and the United States has led to an easing of trade tensions, which should contribute to removing impediments to trade growth. Looking ahead, global inflationary pressures are expected to remain contained, while the balance of risks to global economic activity, although less pronounced, remains tilted to the downside.

Since the Governing Council meeting in December 2019, movements in euro area financial markets have been limited, with asset prices continuing to be supported by accommodative monetary policy and improved risk sentiment as trade tensions have further receded. Long-term risk-free rates are broadly unchanged and the EONIA forward curve has shifted slightly upwards, continuing to signal market expectations of an unchanged deposit facility rate in the coming months. Sovereign spreads have remained broadly stable over this period. Equity prices have increased amid lower risk premia, and corporate bond spreads have decreased slightly. In foreign exchange markets, the euro has weakened slightly in trade-weighted terms.

Euro area real GDP increased by 0.3%, quarter on quarter, in the third quarter of 2019, following growth of 0.2% in the second quarter. This pattern of moderate growth

reflects the ongoing weakness of international trade in an environment of continued global uncertainties, which has particularly affected the euro area manufacturing sector and has also dampened investment growth. At the same time, the services and construction sectors remain more resilient, despite some moderation in the latter half of 2019. Incoming economic data and survey information point to some stabilisation in euro area growth dynamics, with near-term growth expected to be similar to rates observed in previous quarters. Looking ahead, the euro area expansion will continue to be supported by favourable financing conditions, further employment gains in conjunction with rising wages, the mildly expansionary euro area fiscal stance and the ongoing – albeit somewhat slower – growth in global activity.

Euro area annual HICP inflation increased to 1.3% in December 2019, from 1.0% in November, reflecting mainly higher energy price inflation. On the basis of current futures prices for oil, headline inflation is likely to hover around current levels in the coming months. While indicators of inflation expectations remain at low levels, recently they have either stabilised or ticked up slightly. Measures of underlying inflation have remained generally muted, although there are further indications of a moderate increase in line with previous expectations. While labour cost pressures have strengthened amid tighter labour markets, the weaker growth momentum is delaying their pass-through to inflation. Over the medium term, inflation is expected to increase, supported by the ECB's monetary policy measures, the ongoing economic expansion and solid wage growth.

Regarding monetary developments, broad money (M3) growth stood at 5.6% in November 2019, broadly unchanged since August. M3 growth continues to be backed up by bank credit creation and the narrow monetary aggregate M1 remained the main contributor to broad money growth. The growth of loans to firms and households remained solid, benefiting from the ongoing support provided by the ECB's accommodative monetary policy stance, which is reflected in very low bank lending rates. While the annual growth rate of loans to households remained unchanged from October, at 3.5% in November, the annual growth rate of loans to non-financial corporations moderated to 3.4%, from 3.8% in October, likely reflecting some lagged reaction to the past weakening in the economy. However, credit standards for both loans to firms and loans to households for house purchase remained broadly unchanged, pointing to still favourable credit supply conditions. The Governing Council's accommodative monetary policy stance will help to safeguard favourable bank lending conditions and will continue to support access to financing across all economic sectors and in particular for small and medium-sized enterprises.

Combining the outcome of the economic analysis with the signals coming from the monetary analysis, the Governing Council confirmed that an ample degree of monetary accommodation is still necessary for the continued robust convergence of inflation to levels that are below, but close to, 2% over the medium term.

On the basis of this assessment, the Governing Council decided to keep the key ECB interest rates unchanged and expects them to remain at their present or lower levels until it has seen the inflation outlook robustly converge to a level sufficiently close to, but below, 2% within its projection horizon, and such convergence has been consistently reflected in underlying inflation dynamics.

The Governing Council confirmed that it will continue to make net purchases under the ECB's asset purchase programme (APP) at a monthly pace of €20 billion. It expects them to run for as long as necessary to reinforce the accommodative impact of the ECB policy rates, and to end shortly before the Governing Council starts raising the key ECB interest rates.

The Governing Council also intends to continue reinvesting, in full, the principal payments from maturing securities purchased under the APP for an extended period of time past the date when it starts raising the key ECB interest rates, and in any case for as long as necessary to maintain favourable liquidity conditions and an ample degree of monetary accommodation.

In the light of the continued subdued inflation outlook, the Governing Council reiterated the need for a highly accommodative stance of monetary policy for a prolonged period of time to support underlying inflation pressures and headline inflation developments over the medium term. The Governing Council's forward guidance will ensure that financial conditions adjust in accordance with changes to the inflation outlook. In any case, the Governing Council continues to stand ready to adjust all of its instruments, as appropriate, to ensure that inflation moves towards its aim in a sustained manner, in line with its commitment to symmetry.

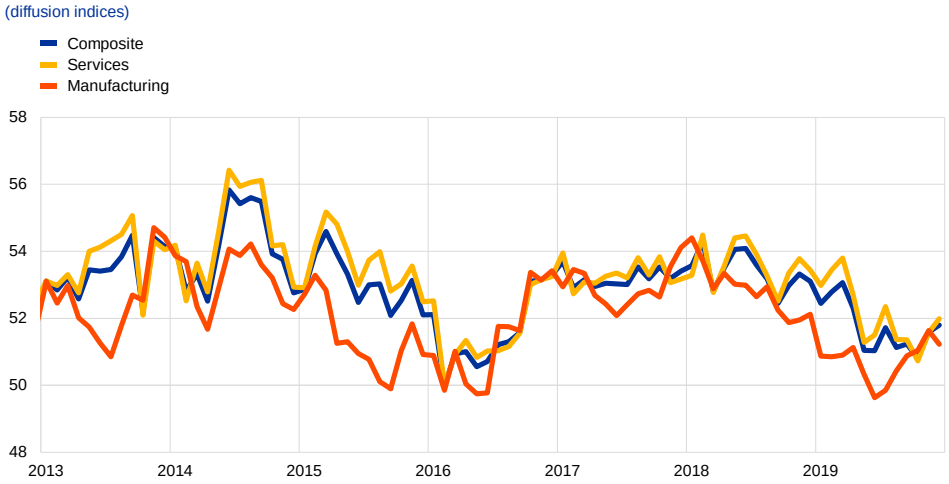
The Governing Council also decided to launch a review of the ECB's monetary policy strategy. The review will encompass the quantitative formulation of price stability, the monetary policy toolkit, the economic and monetary analyses and communication practices. Other considerations, such as financial stability, employment and environmental sustainability, will also be part of the review, which is expected to be concluded by the end of 2020. The review will be based on thorough analysis and open minds. Accordingly, the Eurosystem will engage with all stakeholders.

1 External environment

The outlook for global economic activity (excluding the euro area) remains subdued but has been showing signs of stabilisation. The global composite output Purchasing Managers' Index (PMI) excluding the euro area increased moderately in December. The manufacturing component in particular recovered in the fourth quarter, signalling a firming of global manufacturing activity, which had gradually weakened since early 2018. The services sector remained resilient and grew further in December (see Chart 1).

Chart 1

Global output PMI (excluding the euro area)



Sources: Markit and ECB calculations.
Notes: The latest observations are for December 2019.

Risks to the global outlook remain elevated but are less skewed to the downside. The partial US-China trade agreement represents a welcome easing of trade tensions. The so-called "Phase 1" deal includes a commitment from China to purchase a substantial amount of a broad range of US agricultural and other goods and services, which may affect demand for EU exports to China. It also aims to bring about changes in areas ranging from exchange rate policy to intellectual property protection and technology transfer. The US Trade Representative has clarified that certain existing tariffs will be reduced – including the September 2019 tariffs, which will be halved – and that the planned December 2019 tariffs will be postponed indefinitely. Moreover, China has dropped duties that were to come into effect alongside the US tariffs previously scheduled for December and will continue to hold back from introducing retaliatory tariffs on US-made automobiles and auto parts.

Financial conditions continued to loosen on the back of easing trade tensions. Financial conditions remain very loose by historical standards. In advanced economies this dynamic is partly related to the exceptional response by central banks to the Great Recession of 2007-09 and the relatively weak global economic performance in recent years. In emerging markets, financial conditions also remain accommodative but have not eased to the same extent on account of the current broad-based strength of the US dollar. Looking ahead, in 2020 financial conditions will

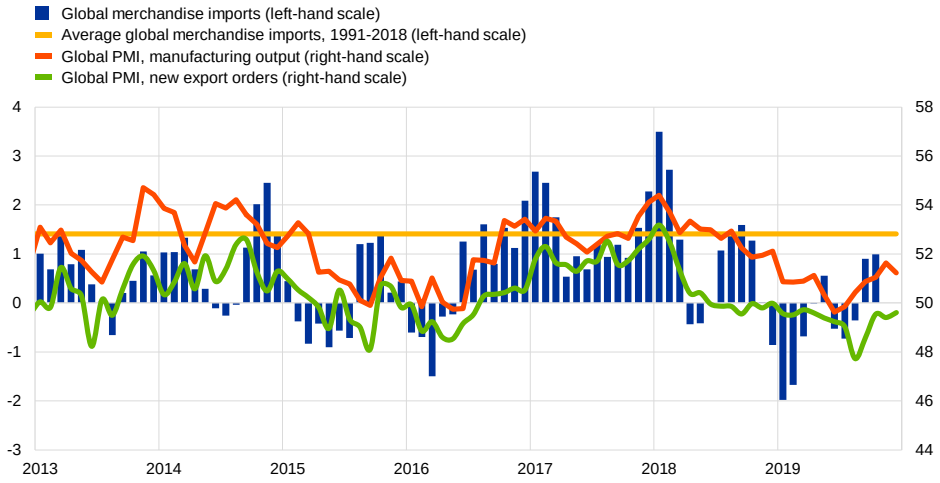
benefit from anchored inflation rate expectations, firms' expectations of earnings growth in the United States and other major economies, and a possible further easing of trade tensions.

The global trade momentum remains weak, albeit amid signs of stabilisation. Global merchandise imports continued to increase moderately in October, while the global PMI for new export orders excluding the euro area continued to recover in December. For the fourth quarter as a whole, the global PMI for new export orders increased significantly relative to the third quarter, with the index nearing the neutral threshold (see Chart 2). The recent easing of trade tensions further serves to remove impediments to global trade activity. In line with this outlook, high frequency trade data are, on balance, consistent with low but positive growth in world trade.

Chart 2

Surveys and global trade in goods (excluding the euro area)

(left-hand scale: three-month-on-three-month percentage changes; right-hand scale: diffusion indices)



Sources: Markit, CPB Netherlands Bureau for Economic Policy Analysis and ECB calculations.
Note: The latest observations are for October 2019 for global merchandise imports and December 2019 for the PMIs.

Global inflation rose further in November. Annual consumer price inflation in the countries of the Organisation for Economic Co-operation and Development (OECD) increased to 1.8% in November, driven in part by high food price inflation in selected emerging market economies, including China and India. Meanwhile, inflation excluding energy and food increased only marginally to 2.1% in November, from 2.0% in the previous month. Looking ahead, global inflationary pressures are expected to remain contained. Wage growth in advanced economies continues to be moderate despite a tightening of labour markets and rising capacity constraints.

Oil markets have remained broadly stable. Oil prices were supported only temporarily by the OPEC+ group of major oil producers, who extended their production cuts in early December. Prices spiked at around USD 70 per barrel in early January, following a rise in tensions in the Middle East, but fell back quickly after tensions eased. With high levels of inventories and US shale oil production, together with the International Energy Agency projecting global oil demand to slow in the first quarter of 2020, oil markets are expected to remain well supplied despite the recent

OPEC+ agreement. Total non-oil prices increased slightly (+1.7%) as both metal prices (+1.2%) and food prices rose (+2.8%).

Economic growth in the United States remained moderate in the third quarter of 2019. Annualised US real GDP growth stood at 2.1%. Despite the modest pick-up in activity from second quarter growth of 2.0%, economic activity moderated as a result of weak investment, the fading effect of the 2018 tax reform and the maturing business cycle. Risks to the outlook have eased somewhat but are still tilted to the downside. While trade tensions with China have eased, the recent announcement by Boeing to halt, indefinitely, the production of its 737 MAX in January represents a new risk. The net impact on the economy so far has been modest, as a decline in deliveries has been offset by accumulating inventories. Looking ahead, however, weakness in the manufacturing sector is likely to persist. Apart from the issues at Boeing, prolonged trade uncertainties, subdued global growth and the broad-based appreciation of the US dollar in recent years continue to weigh on the economy.

In Japan, the government has prepared a stimulus package to support economic growth. In early December, the government of Prime Minister Abe announced a fiscal package to tackle downside risks to activity stemming from a weak external environment and recent natural disasters. Under the package, fiscal spending amounts to 2.4% of GDP, which puts it among the largest fiscal stimulus packages enacted under "Abenomics". The package will largely be implemented in 2020-21. It should be noted that the impact of the package on the economy partially offsets the recent increase in VAT. In addition, weak manufacturing pushed growth into negative territory in the last quarter of 2019. The economy is expected to return to moderate positive growth in early 2020 as the impact of transitory factors dissipates and fiscal spending takes effect. Consumer price inflation has accelerated slightly. Annual headline inflation increased to 0.5% in November. Looking ahead, subdued wage growth and expectations of stable inflation at low levels imply a weak reflation momentum in the economy.

In the United Kingdom, economic activity appears to have slowed progressively over the fourth quarter of 2019. Confidence indicators remain subdued and well below their historical averages. The outcome of the December election and the large majority obtained by Prime Minister Johnson remove the short-term risk of a no-deal Brexit at the end of January, as the Withdrawal Agreement has now become law. However, the United Kingdom is facing a tight deadline to reach an agreement on its future relationship with the European Union towards the end of 2020, and therefore policy uncertainty remains high.

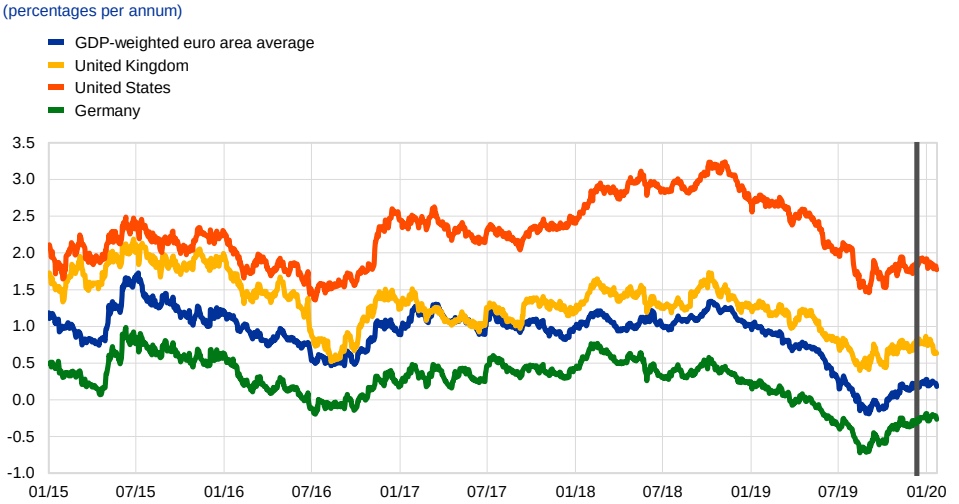
The preliminary trade agreement between the United States and China removes some of the obstacles to Chinese economic activity and trade. China's economy is showing signs of stabilisation and should benefit from the Phase 1 trade deal with the United States. The trade agreement can further support growth by improving net trade and lowering trade-related uncertainty. Meanwhile, annual headline CPI inflation stabilised in December at 4.5% but remained above the official target. The December reading remained elevated owing to ongoing high food price inflation stemming from the outbreak of African swine fever and its impact on pork prices. The latter rose by 97% in year-on-year terms in December, down from 110% in November. At the same time, CPI inflation excluding energy and food remained unchanged at 1.4% in December.

2 Financial developments

Long-term sovereign yields in the euro area were broadly unchanged over the review period amid some volatility, following the large decrease in 2019. Over the period under review (12 December 2019 to 22 January 2020), the GDP-weighted euro area ten-year sovereign bond yield decreased by 1 basis point to 0.20% (see Chart 3). There was some volatility, however, with easing trade tensions following the signing of a "phase 1" US-China trade deal and increasing geopolitical tensions between the United States and Iran. Ten-year sovereign bond yields in both the United Kingdom and the United States decreased slightly over the review period, to 0.63% and 1.77% respectively.

Chart 3

Ten-year sovereign bond yields



Sources: Thomson Reuters and ECB calculations.
Notes: Daily data. The vertical grey line denotes the start of the review period on 12 December 2019.
The latest observations are for 22 January 2020.

Euro area sovereign bond spreads relative to the risk-free overnight index swap (OIS) rate remained broadly stable in the review period for all countries except Spain, where the spread narrowed slightly. The spread on Spanish ten-year sovereign bonds decreased by 4 basis points to 48 basis points following the formation of a new coalition government after an eight-month standstill. Overall, the GDP-weighted spread for the euro area decreased by 1 basis point to 25 basis points.

Broad indices of euro area equity prices rose amid receding trade uncertainty. In a continuation of the trend that started in early 2019, equity prices of euro area financial and non-financial corporations (NFCs) increased by 0.2% and 3.3% respectively in the review period. The positive development of NFC equity prices was supported by a reduction in the equity risk premium, which may partly reflect some relaxation of both global trade tensions and near-term risks related to Brexit.

Euro area corporate bond spreads decreased mildly over the review period. The positive risk sentiment was also reflected in lower corporate bond spreads. The spreads on both investment-grade NFC bonds and financial sector bonds relative to the risk-free rate decreased slightly to stand at 55 and 67 basis points respectively. Although

corporate bond spreads are currently above the lows reached in early 2018, they remain some 50 basis points below the levels observed in March 2016, prior to the announcement and subsequent launch of the corporate sector purchase programme.

The euro overnight index average (EONIA) and the new benchmark euro short-term rate (€STR) averaged -46 and -55 basis points respectively over the review period.[1] Excess liquidity decreased by approximately €51 billion to around €1,740 billion. This decline mainly reflects voluntary repayments in the second series of targeted longer-term refinancing operations (TLTRO II) and, to a lesser extent, an increase in liquidity-absorbing autonomous factors.

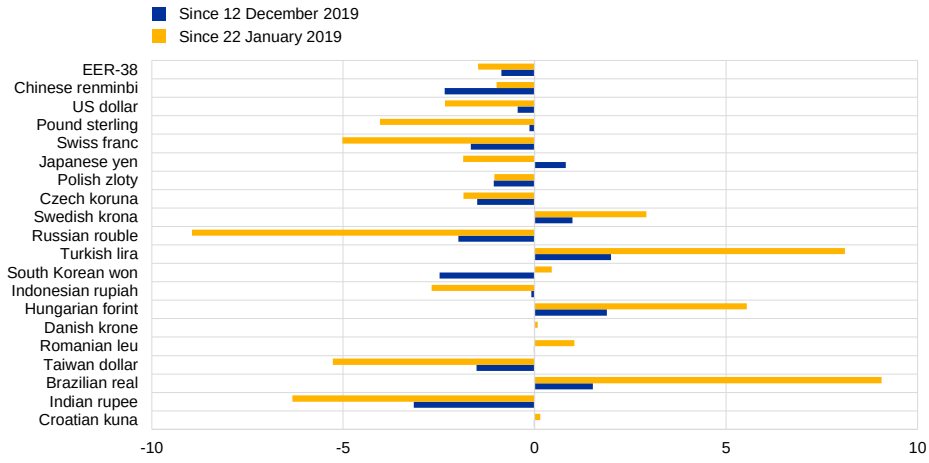
The EONIA forward curve shifted slightly upwards over the review period, as markets do not expect an imminent reduction in the deposit facility rate. By the end of 2022 the curve reaches 10 basis points above the current level of the EONIA. Overall, it remains below zero for horizons up to 2025, reflecting continued market expectations of a prolonged period of negative interest rates.

In foreign exchange markets, the euro weakened slightly in trade-weighted terms over the review period (see Chart 4). The nominal effective exchange rate of the euro, as measured against the currencies of 38 of the euro area's most important trading partners, depreciated by 0.9%. This largely reflected a depreciation of the euro against the Chinese renminbi (by 2.4%) and the currencies of other major emerging economies in Asia, as investor sentiment towards emerging economies improved on the prospect of a reduction in trade tensions. The euro also weakened against the Swiss franc (by 1.7%) as well as – to a lesser extent – against the US dollar (by 0.4%) and the pound sterling (by 0.1%), but strengthened against the Japanese yen (by 0.8%).

Chart 4

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

(percentage changes)



Source: ECB.
Notes: EER-38 is the nominal effective exchange rate of the euro against the currencies of 38 of the euro area's most important trading partners. A positive (negative) change corresponds to an appreciation (depreciation) of the euro. All changes have been calculated using the foreign exchange rates prevailing on 22 January 2020.

[1] The methodology for computing the EONIA changed on 2 October 2019; it is now calculated as the €STR plus a fixed spread of 8.5 basis points. See the box entitled "Goodbye EONIA, welcome €STR!", *Economic Bulletin*, Issue 7, ECB, 2019.

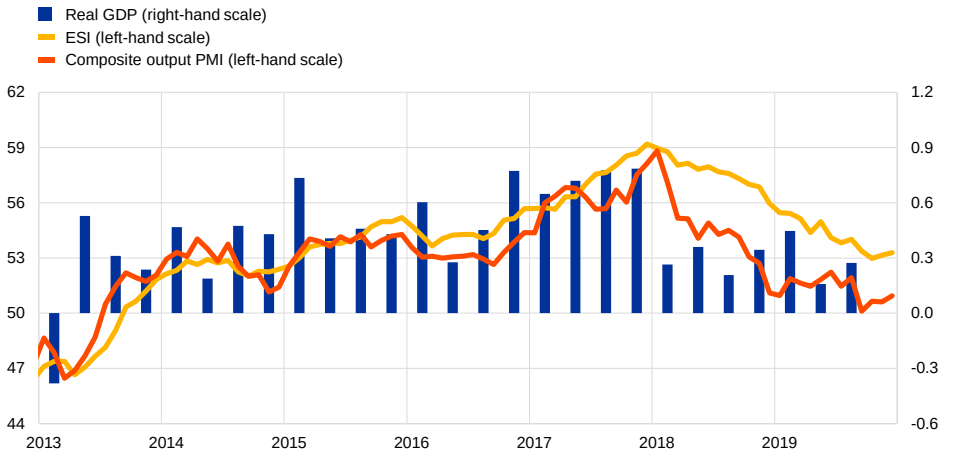
3 Economic activity

Euro area real GDP continued to grow at a moderate pace in the third quarter of 2019. Output in the euro area rose by 0.3%, quarter on quarter, in the third quarter of 2019, following growth of 0.2% in the second quarter (see Chart 5). Domestic demand contributed negatively to GDP growth, and changes in inventories also provided a small negative contribution, while net trade made a positive contribution. However, these contributions to growth were affected by volatility in the data. Economic indicators point to ongoing positive but moderate growth in the fourth quarter of 2019.

Chart 5

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

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



Sources: Eurostat, European Commission, Markit and ECB calculations.
Notes: The Economic Sentiment Indicator (ESI) is standardised and rescaled to have the same mean and standard deviation as the Purchasing Managers' Index (PMI). The latest observations are for the third quarter of 2019 for real GDP and for December 2019 for the ESI and PMI.

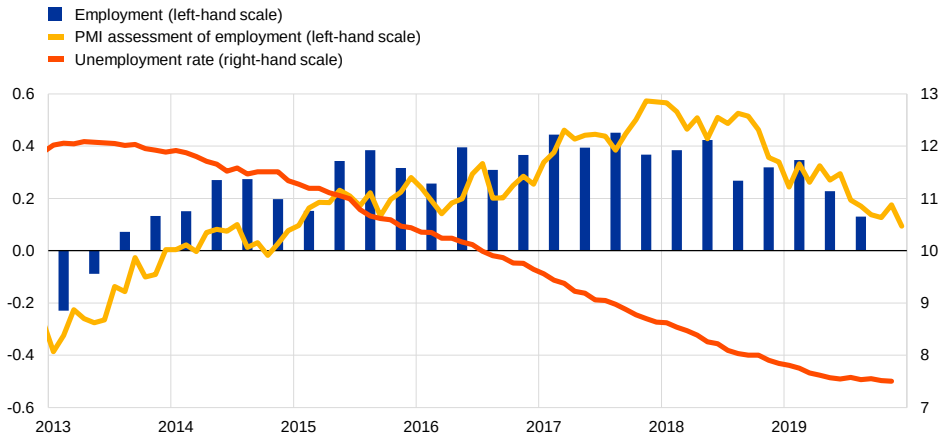
Euro area labour markets remained resilient, with some moderation in growth. Employment increased by 0.1% in the third quarter of 2019 compared with the previous quarter, down from the increase of 0.2% observed in the second quarter, and in line with the moderation in output growth. Employment growth was broad-based across countries and sectors. Employment has risen for 25 consecutive quarters since mid-2013, with the number of people employed increasing by about 11.4 million. Hourly productivity increased by 0.1%, quarter on quarter, in the third quarter of 2019, remaining unchanged from the previous quarter. The euro area unemployment rate stood at 7.5% in November 2019, remaining virtually unchanged compared to June 2019.

Looking ahead recent data and survey indicators continue to point to positive but moderating employment growth. Short-term survey indicators, despite declining from the high levels recorded in 2018, point to continued employment growth in the near term, supported by employment in the services sector.

Chart 6

Euro area employment, PMI assessment of employment and the unemployment rate

(left-hand scale: quarter-on-quarter percentage changes, diffusion index; right-hand scale: percentages 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 third quarter of 2019 for employment, December 2019 for the PMI and November 2019 for the unemployment rate.

Rising employment and income levels continue to support consumer spending. Private consumption rose by 0.5%, quarter on quarter, in the third quarter of 2019, which is the strongest rate of expansion since the third quarter of 2017. Household real disposable income has been largely unaffected by the recent economic slowdown. Annual growth of real gross disposable income rose from 2.2% in the second quarter to 2.3% in the third quarter. Overall, employment growth has continued to support labour income. In addition, lower direct taxes and social security contributions, reflecting fiscal measures in a number of euro area countries, have contributed positively to households' purchasing power. The savings ratio increased further in the third quarter of 2019 as income growth outpaced consumption growth.

Looking ahead private consumption should continue to underpin growth in the euro area. Recent data on the volume of retail sales and new passenger car registrations point to somewhat lower consumption growth in the fourth quarter of 2019 compared with the previous quarter. However, other indicators support the picture of fairly robust consumption dynamics. Consumer confidence, which started to decline at the end of 2017, has stabilised and remained broadly steady over the course of 2019. The latest survey results also signal continued, albeit slowing, employment growth, which should continue to support household income and consumer spending.

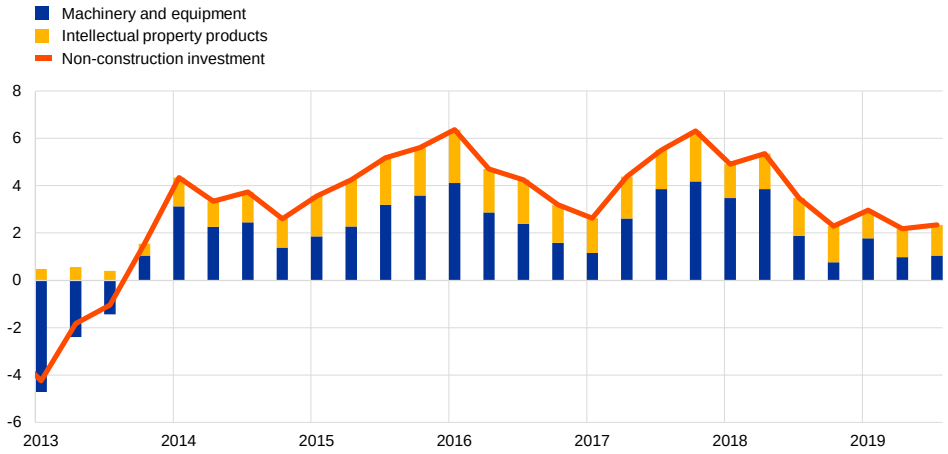
Business investment is expected to remain subdued – in a context of still elevated uncertainty and weak profit margins – but supported by favourable financing conditions. According to the latest quarterly national accounts data for the euro area, non-construction investment declined sharply in the third quarter of 2019 (-7.7% quarter on quarter), following strong growth in the second quarter (10.3% quarter on quarter). However, this is mostly due to the incorporation of volatile Irish data for the most recent quarters, reflecting developments in investment in intellectual property products. Looking through this volatility, incoming data suggest rather moderate or even negative investment growth in the euro area. For instance, annual

growth in investment in machinery and equipment has slowed gradually since 2018 (see Chart 7). As regards near-term development, in October and November 2019 industrial production of capital goods stood, on average,1.4% below its average level in the previous quarter; in the period to December industrial confidence in the capital goods production sector stabilised at levels below its historical average. Despite rising in the third quarter, firms' profit margins remain weak in a context of ongoing elevated uncertainty. Moreover, according to the November 2019 EIB Investment Survey, the number of EU manufacturing firms planning to reduce investment in the next 12 months has risen for the first time in four years (see Box 6 entitled "Business outlook surveys as indicators of euro area real business investment"). The softer investment outlook reflects more widespread expectations of a deterioration in the economic, political and regulatory outlook over the next 12 months. The European Commission biannual investment survey from the end of November also points to modest euro area industrial investment growth in 2020. On a more positive note, favourable financing conditions continue to support business investment.

Chart 7

Non-construction investment and components

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



Sources: Eurostat and ECB calculations.
Notes: Non-construction investment is decomposed into (a) machinery and equipment, and (b) investment in intellectual property products, excluding cultivated biological resources (which have a very small weight). The chart shows an aggregation of the four largest EU Member States' data.

Housing investment should maintain its moderate momentum over the near term, supported by buoyant demand and favourable financing conditions, but limited by supply-side constraints. According to the latest quarterly national accounts, construction investment and its housing component grew strongly in the third quarter (0.9% and 1.1% respectively, quarter on quarter), after a modest contraction in the previous quarter (-0.3% and -0.1% respectively, quarter on quarter). Together with the latest outcomes for construction production and building permits, short-term and survey indicators suggest that the moderate growth momentum in housing investment is likely to continue in the fourth quarter of 2019. In this period housing investment is expected to be supported mainly by strong housing demand, as shown by rising spending intentions on housing and strong demand for housing loans, while some positive signals have also emerged on the supply side, in particular looking at the PMI for housing activity.

Extra euro area exports of goods show some signs of stabilisation, while imports and intra-euro area trade weakened further in the fourth quarter of 2019. After a rebound in export growth in the third quarter of 2019 (from negative growth in the previous quarter) preliminary trade goods data to November indicate a stabilisation of extra euro area exports, which have been characterised by pronounced volatility, most likely associated with stockpiling behaviour related to concerns about the possibility of a hard Brexit in October 2019. Data show relatively resilient growth in exports to the United States and a firming recovery in exports to Turkey and China, while exports to the rest of Asia remain subdued. On the other hand, intra-euro area goods exports and imports declined in October and November, reflecting weakness in euro area industrial production and activity. The latest release of national accounts data shows a marked decline in imports in the third quarter of 2019, mostly driven by trade in services, which contracted strongly by 5.1% after posting 8.4% growth, quarter on quarter, in the second quarter. However, this was mainly driven by Irish data. Leading indicators point to below-trend dynamics for extra-euro area exports. While the PMI for new manufacturing export orders improved to 47.3 (which is nevertheless still in contraction territory), the European Commission's indicator on the assessment of export order books fell again in December. At the same time, signals from shipping indicators are more positive.

Incoming data and survey results point to ongoing positive but moderate economic growth in the fourth quarter of 2019. Weak global trade, together with a prolonged period of uncertainty, continue to hamper the overall performance of output growth in the euro area. For instance, industrial production stood below its average level in the third quarter, thus pointing to a further quarter-on-quarter fall in production in the fourth quarter. As regards more timely survey data, in the fourth quarter both the European Commission's ESI and the composite output PMI were below their respective average levels in the third quarter.

Looking ahead the euro area expansion will continue to be supported by favourable financing conditions. In addition, growth is likely to be underpinned by further employment gains in conjunction with rising wages, the mildly expansionary euro area fiscal stance and the ongoing – albeit somewhat slower – growth in global activity. The results of the latest round of the ECB Survey of Professional Forecasters, conducted in early January, showed that the private sector GDP growth forecasts for 2020 and 2021 had only been revised marginally compared with the previous round, conducted in early October.

Although the risks surrounding the outlook for growth in the euro area, related to geopolitical factors, rising protectionism and vulnerabilities in emerging market economies, remain tilted to the downside, they have become somewhat less pronounced, as some of the uncertainty surrounding international trade is receding.

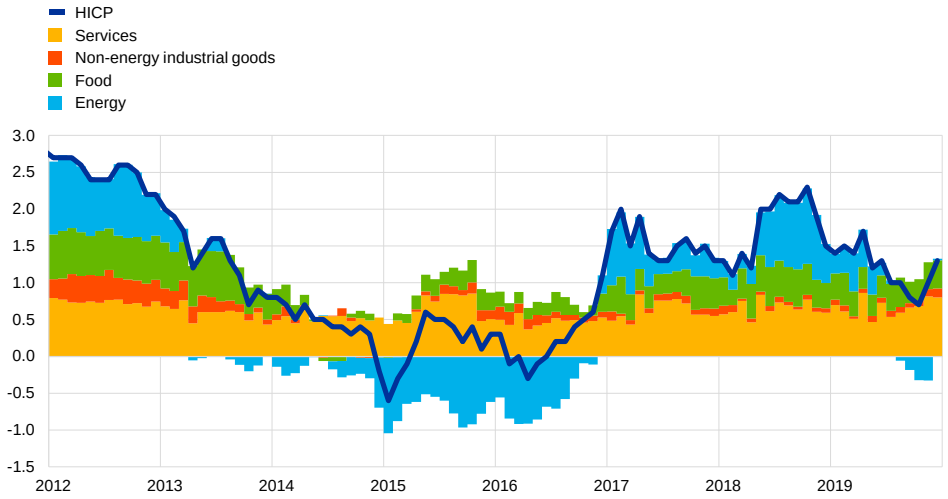
4 Prices and costs

HICP inflation increased to 1.3% in December 2019, up from 1.0% in November 2019. The increase reflected increases in energy inflation and, to a small extent also food inflation, more than offsetting a marginal decrease in services inflation. Energy inflation rebounded from the negative rates seen since August 2019 to turn positive again in December 2019.

Chart 8

Contributions of components of euro area headline HICP inflation

(annual percentage changes; percentage point contributions)



Sources: Eurostat and ECB calculations.
Notes: The latest observations are for December 2019. Growth rates for 2015 are distorted upwards owing to a methodological change (see the box entitled "A new method for the package holiday price index in Germany and its impact on HICP inflation rates", *Economic Bulletin*, Issue 2, ECB, 2019).

Measures of underlying inflation remained generally muted, although there are further indications of a moderate increase in line with previous expectations. HICP inflation excluding energy and food stood at 1.3% in December, unchanged from November, after 1.1% in October. HICP inflation excluding energy, food, travel-related items and clothing remained at 1.2% in December, unchanged from November, after 1.1% in October. Signals from other measures of underlying inflation, including the Persistent and Common Component of Inflation (PCCI) indicator and the Supercore indicator,[2] remained broadly unchanged.

Pipeline price pressures for HICP non-energy industrial goods remained broadly stable at the later stages of the supply chain. The annual rate of change in producer prices for domestic sales of non-food consumer goods was 0.8% in November 2019, unchanged since July 2019 and well above its long-term average. The annual rate of change in import prices for non-food consumer goods remained at -0.1% in November, unchanged from October and down from 0.9% in September. At the earlier stages of the supply chain, domestic producer price inflation for intermediate goods weakened further, declining to -1.4% in November, from -1.0% in October. Similarly, import price inflation

[2] For further information on these measures of underlying inflation, see Boxes 2 and 3 in the article entitled "Measures of underlying inflation for the euro area", *Economic Bulletin*, Issue 4, ECB, 2018.

for intermediate goods decreased to -0.9% in November, from -0.6% in October. Global producer price inflation excluding energy also declined further to 1.0% in November, from 1.1% in October, and was below its long-term average.

Wage growth remained resilient. Annual growth in compensation per employee stood at 2.2% in the third quarter of 2019, unchanged from the second quarter, after 2.3% in the first quarter. The figures for 2019 were affected by a significant drop in employers' social security contributions in France.[3] Annual growth in wages and salaries per employee, which excludes social security contributions, was 2.6% in the third quarter, up from 2.5% in the second quarter. Looking across the different indicators and through temporary factors, wage growth has moved broadly sideways since mid-2018, either at around or slightly above historical averages.

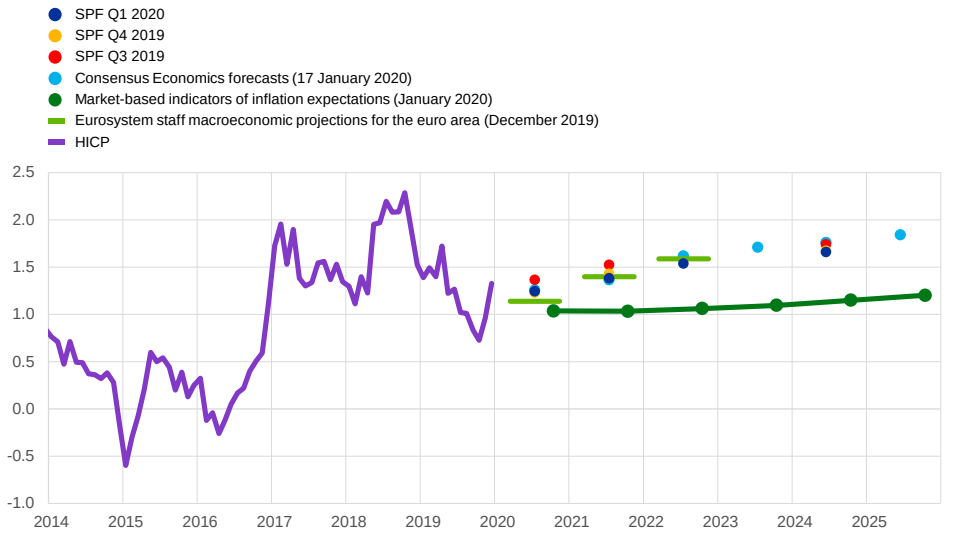
Market-based indicators of longer-term inflation expectations recovered slightly, while survey-based expectations remained at the relatively low levels seen over the course of 2019. As a result of the mild recovery, market-based indicators of longer-term inflation expectations now stand somewhat more visibly above the historical lows reached in October 2019. The five-year forward inflation-linked swap rate five years ahead stood at 1.31% on 22 January 2020, around 4 basis points above its level in mid-December 2019 and 19 basis points above the low in October 2019. The market-based probability of deflation edged down, after increasing during most of 2019, and remains below the levels observed prior to the announcement of the asset purchase programme in 2015. At the same time, the forward profile of market-based indicators of inflation expectations continues to point to the risk of a prolonged period of low inflation. The results of the ECB Survey of Professional Forecasters (SPF) for the first quarter of 2020 show average longer-term inflation expectations to be unchanged at 1.7%. Together with average point forecasts for annual HICP inflation of 1.2%, 1.4% and 1.5% for 2020, 2021 and 2022 respectively, this points to an upward sloping forward profile. The results for 2020 and 2021 are the same as in the previous survey round, where 2022 was not surveyed.

[3] For a discussion, see Box 5 entitled "Recent developments in social security contributions and minimum wages in the euro area", *Economic Bulletin,* Issue 8, ECB, 2019.

Chart 9

Market and survey-based indicators of inflation expectations

(annual percentage changes)



Sources: ECB Survey of Professional Forecasters (SPF), Eurosystem staff macroeconomic projections for the euro area (December 2019) and Consensus Economics (17 January 2020).
Notes: The SPF for the first quarter of 2020 was conducted between 7 and 13 January 2020. The market-implied curve is based on the one-year spot inflation rate and the one-year forward rate one year ahead, the one-year forward rate two years ahead, the one-year forward rate three years ahead and the one-year forward rate four years ahead. The latest observations for market-based indicators of inflation expectations are for 22 January 2020.

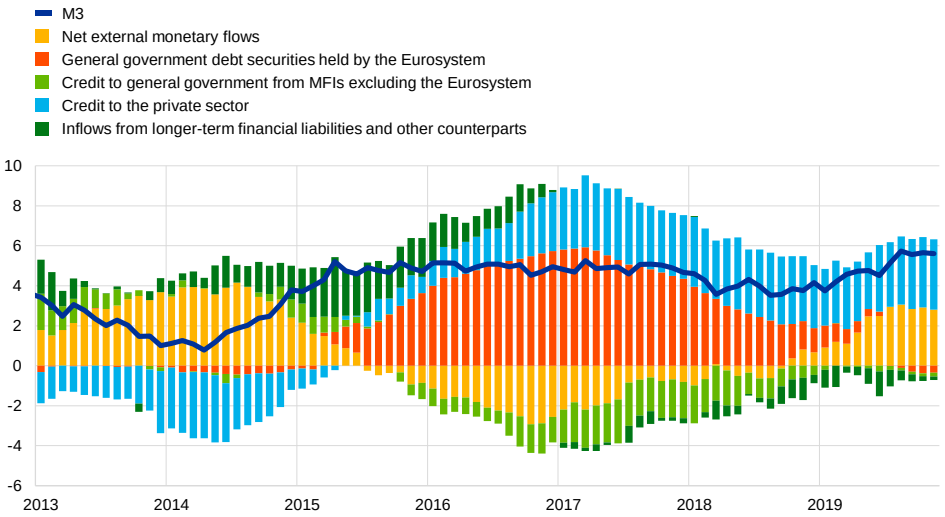
5 Money and credit

Broad money growth has remained robust. The annual growth rate of M3 stood at 5.6% in November 2019, broadly unchanged since August 2019 (see Chart 10). M3 growth continued to be supported by bank credit creation to the private sector and the very low opportunity cost of holding money. The narrow monetary aggregate M1, which includes the most liquid components of M3, continued to be the main contributor to broad money growth. With an annual growth rate of 8.3% in November 2019, M1 was around 2 percentage points above its trough in January 2019. Among M1 components, the annual growth of currency in circulation remained solid at 5.0%, although not exceptionally high by historical standards, pointing to no pervasive substitution into cash.

Chart 10

M3 and its counterparts

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

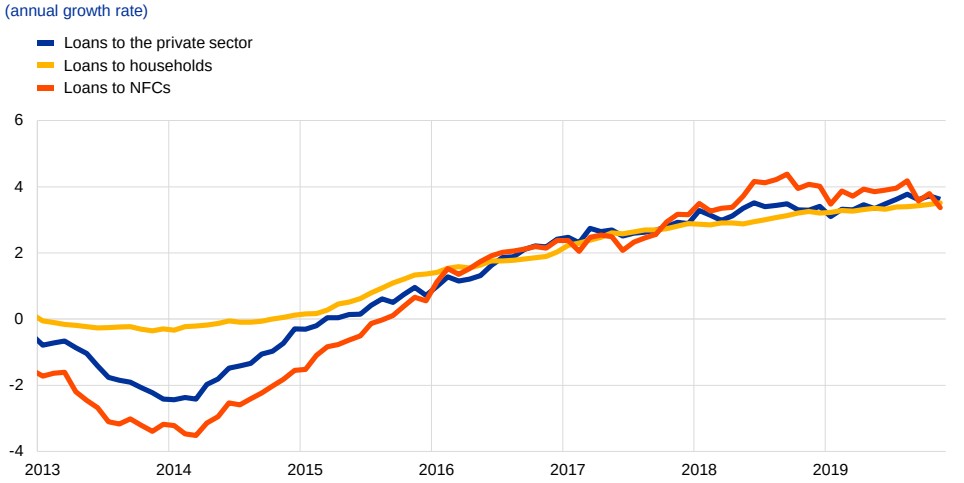


Source: ECB.
Notes: Credit to the private sector includes MFI loans to the private sector and MFI holdings of securities issued by the euro area private non-MFI sector. As such, it also covers the Eurosystem's purchases of non-MFI debt securities under the corporate sector purchase programme. The latest observation is for November 2019.

Credit to the private sector has remained the main source of money growth, followed by external monetary inflows. In November the contribution of credit to the private sector and of external monetary inflows remained broadly unchanged (see, respectively, the blue and yellow portions of the bars in Chart 10). The support from external monetary inflows to M3 growth since October 2018 has reflected ongoing interest of foreign investors in euro area assets, in particular newly issued government securities. The termination of net monthly asset purchases under the asset purchase programme (APP) at the end of 2018 had implied that the contribution from general government securities held by the Eurosystem started to fade out (see the red portion of the bars in Chart 10) in early 2019, while the reactivation of the APP in November 2019 has so far only had limited influence on M3 growth. Furthermore, the drag from longer-term financial liabilities remained small (see the dark green portion of the bars in Chart 10).

Loans to the private sector have continued to grow at a solid rate. The annual growth rate of MFI loans to the private sector (adjusted for loan sales, securitisation and notional cash pooling) stood at 3.6% in November 2019, after 3.7% in October (see Chart 11). This development was mainly due to a decrease in the annual growth rate of loans to non-financial corporations (NFCs), which fell to 3.4% in November from 3.8% in October. The moderation in NFC loan dynamics is in line with the slowdown of economic activity observed since 2018. Loans to households grew at an annual rate of 3.5% in November 2019, unchanged from October. Overall, loan growth continued to benefit from historically low bank lending rates and the overall favourable supply of bank loans, while the slowdown in economic activity dampened loan demand, as also indicated by the results of the latest euro area bank lending survey.

Chart 11
Loans to the private sector



Source: ECB.
Notes: Loans are adjusted for loan sales, securitisation and notional cash pooling. The latest observation is for November 2019.

The January 2020 euro area bank lending survey **found that credit standards for loans to enterprises and loans to households for house purchase remained broadly unchanged.**[4] Competition from other banks continued to contribute to an easing of credit standards for enterprises and households. In the case of loans to enterprises, there was a tightening impact stemming from risk perceptions related to the economic outlook. Credit terms and conditions (i.e. the actual conditions laid down in the loan contract) for new loans to enterprises and housing loans remained broadly unchanged in the fourth quarter of 2019. Loan demand from enterprises decreased for the first time since the fourth quarter of 2013, reflecting the slowdown in economic activity observed since 2018, with financing needs for fixed investment ceasing to make a positive contribution to loan demand, while the general low level of interest rates continued to support loan demand from firms and households. Euro area banks also indicated that their access to debt securities funding and securitisation continued to improve in the fourth quarter of 2019. At the same time, they highlighted a continued strengthening of their capital position against the backdrop of regulatory or

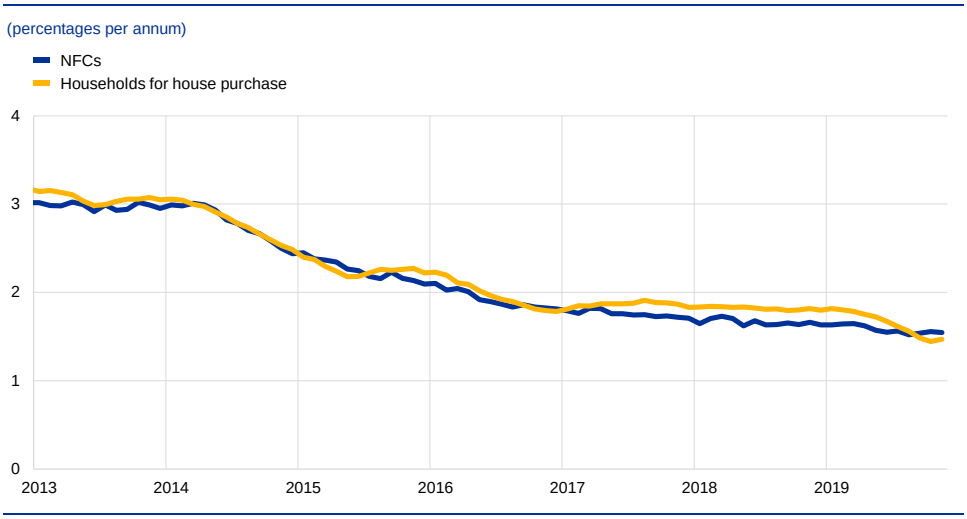
[4] In the fourth quarter of 2019, credit standards (i.e. banks' internal guidelines or loan approval criteria) for NFCs and households remained broadly unchanged (with the net percentage of banks reporting tightening standing at 1% for both types of lending, compared with -2% in the third quarter of 2019).

supervisory actions in the second half of 2019 and a small tightening of their credit standards for loans to enterprises and consumer credit on account of non-performing loan ratios. Furthermore, banks indicated their intention to use TLTRO III liquidity to a large extent for granting loans to the non-financial private sector.

Very favourable lending rates continued to support euro area economic growth. Lending rates remained close to their historical lows, having declined in line with market reference rates over previous months. In November 2019 the composite bank lending rates for loans to NFCs and households remained broadly unchanged at 1.55% and 1.47% respectively (see Chart 12). Competitive pressures and more favourable bank funding costs dampened lending rates for loans to NFCs and households. Overall, composite bank lending rates for loans to NFCs and households have fallen significantly since the ECB's credit easing measures were announced in June 2014. Between May 2014 and November 2019 composite lending rates on loans to NFCs and households fell by around 140 and 145 basis points respectively.

Chart 12

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 November 2019.

Boxes

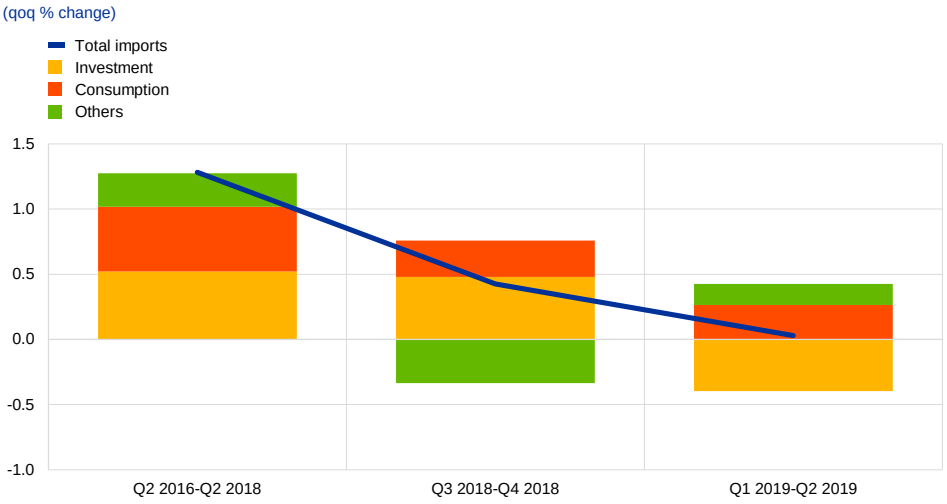
1 Tracking global economic uncertainty: implications for global investment and trade

Prepared by Alina Bobasu, André Geis, Lucia Quaglietti and Martino Ricci[5]

This box sheds light on the role of uncertainty in the recent slowdown of global investment and trade. Over the past year the global economy has transitioned from a robust and synchronised expansion to a widespread slowdown. Global growth has weakened on the back of soft investment, which was also a key driver of the sharp fall in global trade growth in the first half of 2019 (see Chart A)[6]. The slowdown in global investment and trade has occurred in an environment of rising trade tensions between the United States and China, slowing Chinese demand, (geo-)political tensions, Brexit and idiosyncratic stresses in several emerging economies, with rising uncertainty magnifying the negative impact. Against this backdrop, this box assesses the role of uncertainty in the recent slowdown of global investment and trade.

Chart A

Drivers of world imports (excluding the euro area)



Source: ECB calculations.
Notes: Aggregation of 18 countries representing approximatively 75% of euro area foreign demand. Contributions are obtained from individual countries' error-correction models. The models relate import volumes to domestic demand components, commodity prices and relative import prices. According to Bussière et al.[7], measures of import intensity-adjusted demand (IAD) are computed by weighting the components of domestic demand according to their import content derived from global input-output tables. In order to capture long-term factors such as shifts in non-price competitiveness or changes in trade openness, non-linear deterministic trends are also included in the long-run relationships. The long-term coefficient of the elasticity of imports to domestic demand is restricted to one.

5 With thanks to Simone Cigna and Ben Schumann for their valuable input.

6 For more information see Box 1 "What is behind the decoupling of global activity and trade?", *Economic Bulletin*, Issue 5, ECB, Frankfurt am Main, 2019.

7 Bussière et al., "Estimating Trade Elasticities: Demand Composition and the Trade Collapse of 2008-2009", *American Economic Journal: Macroeconomics*, Vol. 5, No 3, 2013.

Since uncertainty cannot be observed directly, proxies are generally used. Economic uncertainty can stem from different sources and is characterised by a situation in which agents cannot contemplate all the possible states of nature or characterise their probability distributions. While the literature goes some way towards defining the concept of uncertainty, including by setting it apart from risk and confidence[8], there is no single commonly accepted measure of uncertainty. Several proxies have been proposed, such as indicators based on stock market volatility, counts of the word "uncertainty" in newspaper articles and measures based on disagreement between professional forecasters.[9]

In this box we present synthetic measures of time-varying macroeconomic uncertainty. Jurado et al. define economic uncertainty as the "conditional volatility of a disturbance that is unforecastable from the perspective of economic agents"[10], with an increase in uncertainty generally being associated with a growing difficulty of predicting future economic outcomes. Based on this definition, we developed measures of economic uncertainty for 16 euro area trading partners, together accounting for around 70% of world GDP (excluding the euro area). The measures were derived from the time-varying volatility of model-based forecast errors of a broad selection of macroeconomic and financial market time series.[11] Applying the same approach to a large selection of country trade indicators, we also derived a measure of global trade uncertainty[12].

The estimation results suggest that while global economic uncertainty has increased gradually over the past year, global trade uncertainty has surged more rapidly. Trade-related uncertainty has risen by some two standard deviations over the past year; more than twice the increase observed in economic uncertainty (see Chart B). While our measures line up reassuringly well with past political, geopolitical and economic events generally associated with high uncertainty, the recent intensification coincides with various tariff announcements made by the United States and China. For instance, the trade uncertainty indicator started rising in mid-2018 when US tariffs on steel and aluminium were announced, and spiked again in the first quarter of 2019 after the United States increased tariffs on USD 200 billion of imports from China. All countries in the sample (except Switzerland) have experienced an increase in uncertainty since early 2018.

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8 For a review see Stracca, L. and Nowzohour, L., "More than a feeling: confidence, uncertainty and macroeconomic fluctuations", *Working Paper Series*, No 2100, ECB, September 2017.

9 See Bloom, N., "The impact of uncertainty shocks", *Econometrica*, Vol. 77, No 3, 2009; Baker, S. et al., "Measuring Economic Policy Uncertainty", *The Quarterly Journal of Economics*, Vol. 131, No 4, 2016; Bachmann et al., "Uncertainty and Economic Activity: Evidence from Business Survey Data", *American Economic Journal: Macroeconomics,* Vol. 5, No 2, 2013.

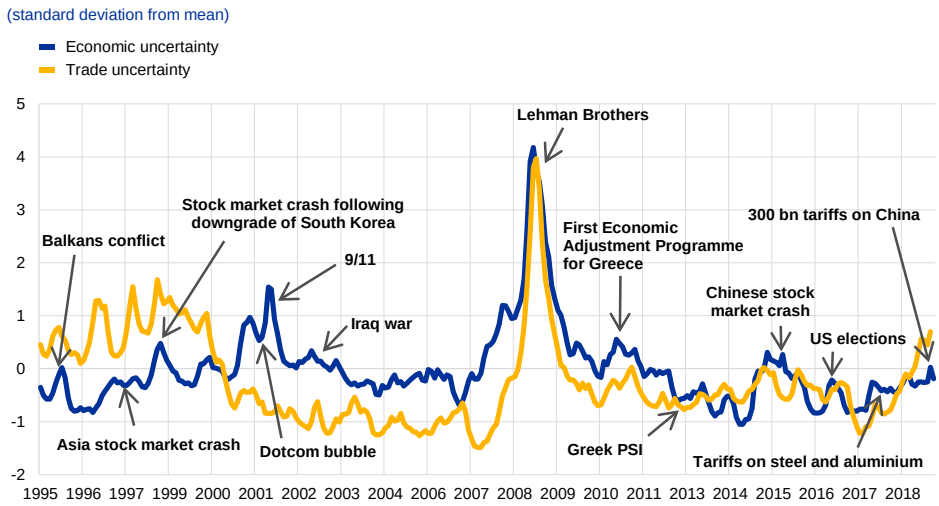
10 See Jurado, K. et al., "Measuring Uncertainty", *American Economic Review*, Vol. 105, No 3, 2015.

11 In more detail, a (monthly) dynamic factor model is deployed to forecast country-specific macro and financial variables one month in advance. A stochastic volatility model is then used to derive the conditional volatility of the model-based forecast error over time. Thereafter, a principal component of the individual time series is extracted to produce a measure of economic uncertainty for each country. Finally, a global uncertainty indicator is produced by aggregating the country-specific indicators using GDP PPP weights. Similarly, a measure of global trade uncertainty is derived from a large database of monthly country-level trade indicators.

12 The trade uncertainty indicator reflects the unforecastable component of a broad set of trade-specific variables such as imports and exports. It therefore accounts for a variety of sources of trade uncertainty, including, but not limited to trade policy uncertainty. The proxy has been chosen based on the fact that gold is considered a safe asset and should therefore emphasise the uncertainty-related component of the events.

Chart B

Global economic and trade uncertainty



Source: ECB calculations.
Note: Standard deviations from means are computed over the period Jan 1998-August 2019.

Following the global financial crisis, policy debates have increasingly focused on the macroeconomic consequences of heightened uncertainty. Recent ECB analysis suggests that rising uncertainty had negative effects on euro area investment during the global financial and euro area sovereign debt crises.[13] An often-cited channel linking uncertainty to real activity is the irreversibility of investment.[14] Moreover, the interplay between uncertainty shocks and financial frictions can have powerful effects on economic activity.[15] Consumers may also react to increased uncertainty by raising their precautionary savings.[16]

Economic uncertainty also appears to play an important role at the current juncture. Analysing the causal relationship between fluctuations in uncertainty and output growth is not straightforward as causality can be bi-directional: higher uncertainty affects economic activity, but (adverse) shocks to output are also likely to raise uncertainty. In order to distinguish exogenous shocks from uncertainty we rely on the methodology proposed by Piffer and Podstawski[17] and estimate a proxy structural vector autoregression (SVAR) in which we use variations in the price of gold as an

13 See ECB Working Group on Econometric Modelling, "Business investment in EU countries", *Occasional Paper Series,* No 215, ECB, October 2018.

14 See Bloom, N., op. cit.

15 See Christiano L. J., Motto, R. and Rostagno, M., "Risk Shocks", *American Economic Review*, Vol. 104, 2014, and Gilchrist, S., Sim, J. W. and Zakrajšek, E., "Uncertainty, Financial Frictions, and Investment Dynamics", *NBER Working Paper,* No 20038, National Bureau of Economic Research, 2014.

16 See Basu, S. and Bundick, B., "Uncertainty Shocks in a Model of Effective Demand: Reply", Federal Reserve Bank of Kansas City, RWP 18-05, 2017.

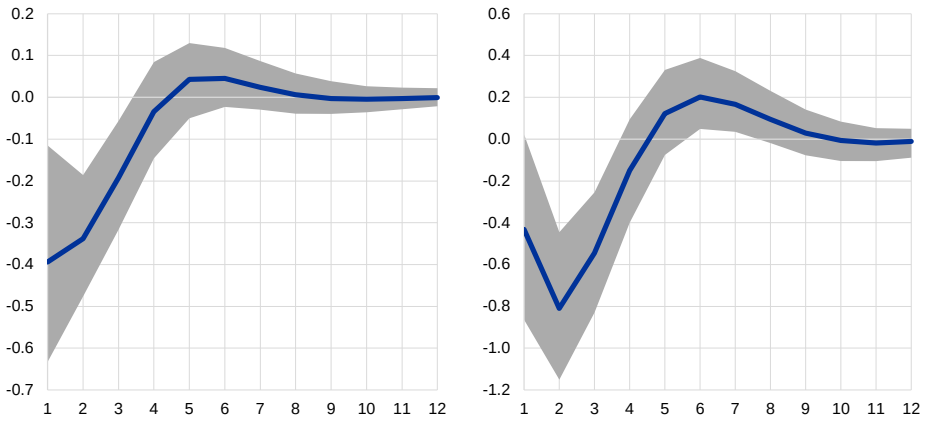
17 See Piffer, M. and Podstawski, M., "Identifying uncertainty shocks using the price of gold", *The Economic Journal*, Vol. 128, 2018. Their proxy, available until 2015, has been extended by adding 20 additional events from 2015Q2 to 2019Q2 that have the potential to generate or reduce uncertainty, are not anticipated and are exogenous to other macroeconomic shocks.

instrument for uncertainty.[18] The results of this analysis suggest that uncertainty shocks matter and are significant in size. On impact, a one standard deviation uncertainty shock subtracts around 0.4 p.p. from growth in global investment and 0.8 p.p. from global imports, respectively (see Chart C). Our analysis also suggests that uncertainty has been a drag on global investment and trade growth over the past year, accounting for a third of the decline in investment and for 40% of the decline in global imports (see Chart D).

Chart C

Impulse response of world investment (lhs) and world imports (rhs), excluding the euro area, to a one standard deviation uncertainty shock

(y-axis: percentage points, x-axis: quarters)



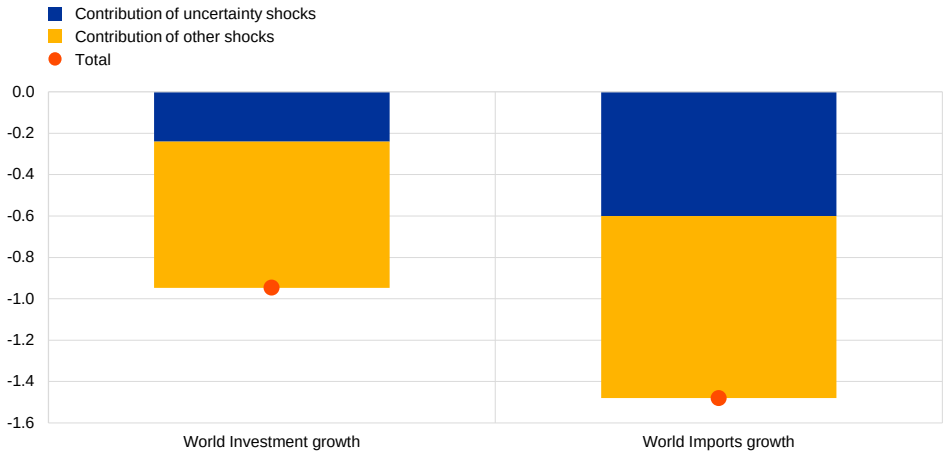
Source: ECB calculations.
Notes: The chart shows impulse response functions obtained from an SVAR model featuring our measure of global economic uncertainty, global investment, global imports, an aggregate measure of interest rates, global CPI inflation and an index of world equity prices. The model is estimated over the period 1996Q1 to 2019Q2. Global aggregates of the variables included in the VAR are constructed from 16 countries accounting for 75% of world GDP using GDP PPP weights. The blue lines show the pointwise medians while the grey areas show the 68% confidence intervals.

[18] A narrative approach is used to identify uncertainty shocks. More specifically, the (percentage) change of the gold price around each event is computed and then all changes are aggregated into a monthly time series. This proxy series is correlated with uncertainty shocks but uncorrelated with other common macroeconomic disturbances. The proxy is then incorporated in a global SVAR model featuring, in addition, the estimated measure of global economic uncertainty, global GDP, global investment, an aggregate measure of interest rates, global inflation and an equity index.

Chart D

Decomposition of world investment growth and world imports growth (excluding the euro area)

(quarterly average percentage change between 2017Q2-2018Q2 and 2018Q2-2019Q2, deviation from trend)



Source: ECB calculations.

A dissipation of uncertainty may also contribute to the pickup in global activity as anticipated by the December 2019 Eurosystem macroeconomic projections. With the headwinds clouding the global economy slowly fading and uncertainty receding, a modest recovery of global activity and trade is expected in the medium term.[19] Growth-supportive policies across many economies are expected to provide additional relief. However, many of the events that have spurred the rise in uncertainty are far from being resolved, and risks to global economic activity are judged to be tilted to the downside. Therefore, uncertainty could continue to cloud the global outlook in the coming quarters.

19 The recent US-China agreement on “Phase 1 trade deal” is likely to reduce uncertainty, removing some drag from global activity and trade.

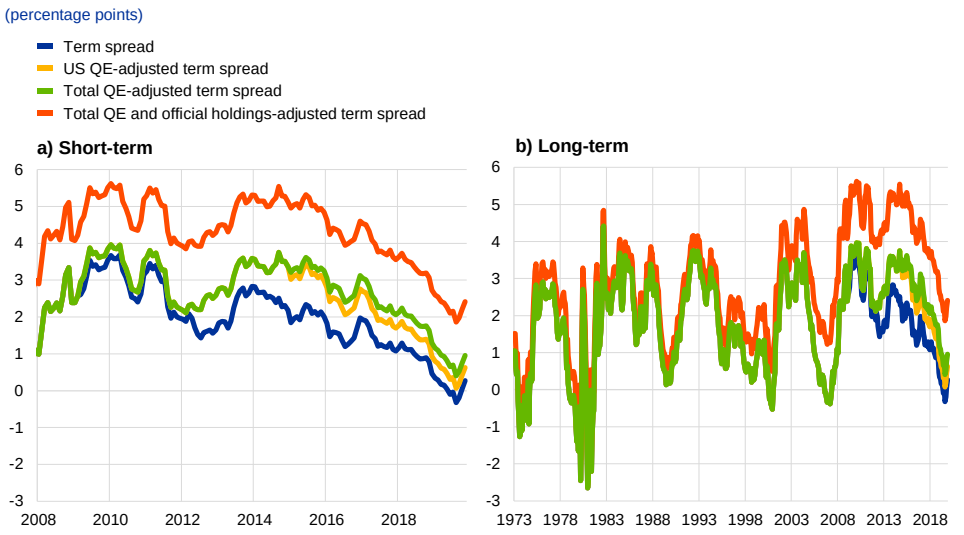
2 US yield curve inversion and financial market signals of recession

Prepared by Johannes Gräb and Stephanie Titzck

The inversion of the US yield curve in mid-2019 led to heightened concerns about a possible US recession. The US yield curve is often seen as a predictor of recessions: a flattening or inversion of the yield curve (or negative term spread), in which interest rates at the long end are below those at the short end, has often been understood as a signal of an impending recession. In late summer 2019 the US yield curve inverted for the first time since the global financial crisis (see Chart A). Global recession analyses may help assess risks to the economic outlook. This box presents an assessment of the probability of a recession in the United States, taking into account developments that have distorted the signals derived from the current yield curve.

Chart A

Adjusting the term spread: short and long-term perspectives



Sources: Federal Reserve System, Haver Analytics and ECB calculations.
Notes: The term spread is the spread between the three-month and ten-year US Treasury yields. The US QE-adjusted term spread is the spread adjusted for the effect of Federal Reserve QE on the ten-year yield. The total QE-adjusted term spread accounts for the effect of Federal Reserve and Eurosystem asset purchases on ten-year US Treasury yields. The total QE and official holdings-adjusted spread accounts for the effect of official holdings on the ten-year yield in addition to the effect of US and euro area QE.
The latest observation is for November 2019.

Standard yield curve-based recession probability models ignore factors that can distort the signals derived from the current yield curve.[20] Yield curve-based recession models typically relate the probability of recession to a measure of the term spread – i.e. the difference between three-month and ten-year US Treasury yields. However, the term spread can be affected by factors that have depressed the term premium in longer-term bond yields largely independently of the domestic economic outlook. First, since the global financial crisis, US long-term yields have been compressed by asset purchases by the Federal Reserve System. Although the

[20] A similar point was also made in Lane, P.R., "The yield curve and monetary policy", Public Lecture for the Centre for Finance and the Department of Economics at University College London, 25 November 2019.

Federal Reserve ceased purchases some time ago and, until the summer of 2019, was in the process of reducing its holdings of bonds, the stock of bonds currently held on its balance sheet has continued to depress term premia on longer-term bonds. Second, in the last few years US long-term yields have been further compressed by the asset purchase programmes of foreign central banks, such as the ECB. Foreign central banks' asset purchases affect US yields through the international portfolio rebalancing channel of monetary policy. Third, since the early 2000s the accumulation of US Treasury holdings by foreign central banks has also compressed longer-term Treasury yields. As demand from foreign central banks is typically price-inelastic, long-term yield compression is likely to occur independently of recession risks in the US economy. As a consequence, the signals from standard recession probability models based on the yield curve may be distorted.

This box presents alternative recession probability models to deal with these possible distortions to the signals from the yield curve. Specifically, term spread measures are constructed to adjust for the effects of asset purchase programmes and foreign central bank reserve accumulation. These measures are then included in a standard logit regression model to assess the probability that a US recession will occur over a one-year horizon.[21] A logit model is used to estimate the probability of a binary event – in this case the US economy being in recession – based on a number of explanatory variables. The following term spread variants are used to estimate the probability of recession:

First, a term spread measure that corrects the US ten-year yield for the effect of the Federal Reserve's quantitative easing (QE) programmes is constructed. To do so, the impact of the three large-scale asset purchase (LSAP) programmes, the maturity extension programme and reinvestments on the US term premium for ten-year government bond yields is assessed.[22] Adjusting the ten-year yield for the effects of QE leads to a markedly larger difference between the three-month and ten-year US Treasury yield (i.e. a wider term spread), in particular between 2012 and 2018 (see Chart A, yellow line). The adjusted term spread increases with the gradual expansion of the Federal Reserve balance sheet and peaks (at 124 basis points) in September 2014, just before the end of net asset purchases. The difference between the standard term spread and the US QE-adjusted term spread narrowed during the Federal Reserve's balance sheet normalisation between October 2017 and August 2019, but it still remains significant.

Second, a term spread measure is derived to account for spillover effects on US yields of asset purchases by Eurosystem central banks (see Chart A, red line). To do so, the correlation coefficient of the day-on-day change in German Bund yields and US Treasury yields at ten-year maturity following ECB asset purchase programme

21 The models control for corporate bond and stock market misalignments by including the excess bond premium and the cyclically adjusted price/earnings ratio.

22 Estimates of the impact on the US term premium are based on Ihrig, J., Klee, E., Li, C, Wei, M. and Kachovec, J., "Expectations about the Federal Reserve's Balance Sheet and the Term Structure of Interest Rates", *International Journal of Central Banking*, Vol. 14(2), March 2018, pp. 341-391.

(APP) announcements is calculated.[23] The total effect of the ECB's quantitative easing on US yields is then calculated by applying the correlation coefficient to the estimated effect of the Eurosystem's APP on the ten-year euro area term premium.[24][25] Finally, the US term spread is corrected for these spillovers from APP announcements by adding the estimates to the US ten-year yield.

Third, a term spread measure that also takes into account the effect of foreign official reserve holdings of US Treasury bonds is constructed (see Chart A, green line). ECB estimates suggest that an increase in foreign official holdings by 10 percentage points of the outstanding stock of US government debt leads to a 55 basis point fall in the term premium on US Treasuries.[26] Given observations of the amount of foreign official US dollar holdings as a share of total outstanding US government debt, it is possible to adjust the ten-year yield for these effects. The official holdings-adjusted term spread starts deviating noticeably from the standard term spread in the early 2000s, when China and other emerging market economies started to increasingly accumulate US dollar reserves (see Chart A). Since 2008 the term spread accounting for the effect of official holdings has on average been about 165 basis points higher than the QE-adjusted term spread.

A model based on the standard term spread may potentially overstate current recession probabilities compared to models that account for the effect of asset purchases. As shown in Chart B, in August 2019, at the point of the greatest yield curve inversion, the predicted one-year-ahead recession probability based on a model using the standard term spread was 37%. In contrast, the term spread adjustments proposed here point to markedly lower probabilities. The model that uses a term spread adjusted for US QE points to a probability of 28%.[27] Once the spillover effects of the APP on the US term spread is also adjusted for, the probability falls to 21%. Further adjustment for the effects of foreign official holdings on the term spread reduces the probability to just 12%.[28]

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23 The coefficient is 0.4, suggesting that an ECB APP announcement that lowers ten-year German Bund yields by 10 basis points leads to a decline of 4 basis points in US Treasury yields with the same maturity. ECB APP announcements are based on Dedola, L., Georgiadis, G., Gräb, J. and Mehl, A., "Does a big bazooka matter? Central bank balance-sheet policies and exchange rates", *Working Paper Series*, No 2197, ECB, November 2018.

24 Estimates are taken from Eser, F., Lemke, W., Nyholm, K., Radde, S. and Vladu, A.L., "Tracing the impact of the ECB's asset purchase programme on the yield curve", *Working Paper Series*, No 2293, ECB, July 2019.

25 This is consistent with Curcuru et al. (2018) who find that ECB policy easing substantially depresses US term premia. See Curcuru, S., Kamin, S. Li, C. and Rodriguez, M., "International Spillovers of Monetary Policy: Conventional Policy vs. Quantitative Easing", *International Finance Discussion Papers*, No 1234, Board of Governors of the Federal Reserve System, August 2018.

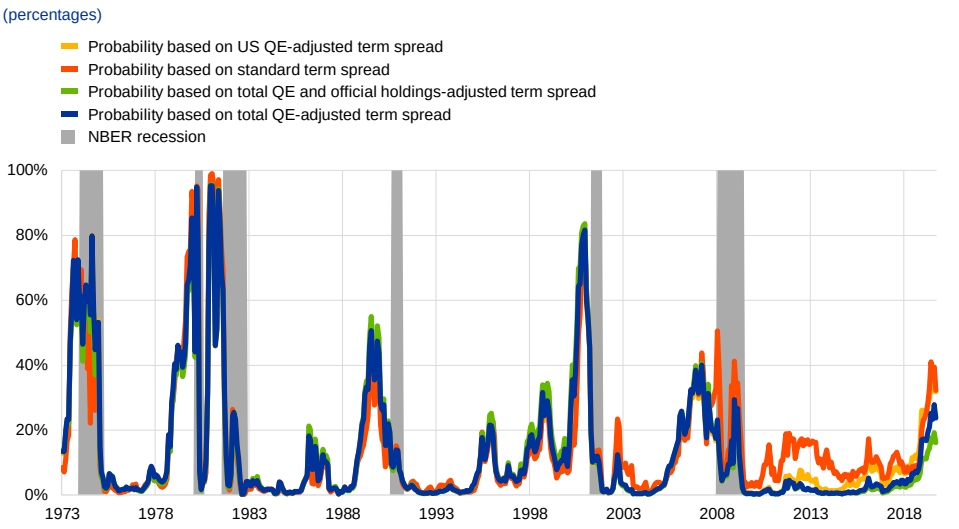
26 Estimates are based on Gräb, J., Kostka, T. and Quint, D., "Quantifying the 'exorbitant privilege' – potential benefits from a stronger international role of the euro", in *The international role of the euro*, ECB, June 2019.

27 Using standard metrics to assess the ability to forecast recessions, it can be shown that, among the models tested, the model with the total QE-adjusted term spread has the highest predictive ability.

28 Swanson and Williams (2014) show that, in particular, rates at shorter horizons were unresponsive to macroeconomic news during this period. Consequently, in all models, the period when the target range for the federal funds rate was at 0% to 0.25% is excluded from the estimation. See Swanson, E.T and Williams, J.C., "Measuring the Effect of the Zero Lower Bound on Medium- and Longer-Term Interest Rates", *NBER Working Paper*, No 20486, September 2014.

Chart B

Recession probabilities based on term spread variants



Sources: Federal Reserve System, Haver Analytics and ECB calculations.
Notes: Shaded areas denote National Bureau of Economic Research (NBER) recessions. The term spread variants are explained in the notes to Chart A.

Overall, models that account for the fact that the term premium in longer-term bond yields, and thus the term spread, can be depressed by factors that are largely independent of the domestic economic outlook suggest a lower probability of a US recession than models based on the standard term spread. In August 2019, when model-based recession probabilities peaked, the correction indicates a 9 to 25 basis points lower probability of a recession one year ahead compared to the standard model. The model that accounts for US and euro area QE, which is found to be best performing in terms of statistical properties, implied a recession probability of 28%. Since August 2019 recession probabilities have declined across all models in line with a widening term spread, driven in particular by an increase in long-term government bond yields. This suggests a somewhat more benign outlook for the United States than suggested by market commentary in the summer of 2019.

3 Breaking the "chain effect" of tariffs – foreign trade zones in the time of protectionism

Prepared by Virginia di Nino, Simone Cigna and Srdan Tatomir

In foreign trade zones (FTZs) imported goods can be handled, manufactured and re-exported without the intervention of customs authorities. This box reviews the benefits of FTZs, how they are used in the United States,[29] China[30] and the European Union (EU)[31] and whether they can cushion the rise in tariffs resulting from new trade restrictions.[32]

FTZs were originally designed to promote economic development and employment by favouring international trade. In FTZs, processing trade and re-exported goods are exempt from import duties – other advantages include lower processing fees and deferred import duties. There are also some disadvantages to FTZs. For example, existing businesses may simply relocate to a FTZ from elsewhere in the same country so as to benefit from lower duties or lower taxes. This can lead to a fall in government tax revenue without sizeable net positive effects on employment and economic activity.[33] With these advantages and disadvantages in mind, the extent to which countries benefit from FTZs is highly context-dependent. In several countries, the number of FTZs has grown over the past two decades as governments have tried to encourage global production on their territories.

FTZs can break the "chain effect" of tariffs to the extent that parts and components (otherwise known as intermediate goods) are either exempted from duties when they are re-exported or can enter the market at favourable rates. In the United States, tariff rates are higher on intermediate goods than on final products (in what is known as tariff inversion), but inputs imported through FTZs can be exempted from duties or levied the lower final product tariff rate. Furthermore, the value created within FTZs is domestic and therefore shielded from US taxation on foreign imports. Instead of paying a tariff on each imported intermediate good entering production of final goods, firms can take advantage of FTZs to break this "chain" of tariffs by only paying the applicable tariff on the foreign value added of the finished item. Alternatively, they can transform and manufacture the goods in FTZs and then re-export them elsewhere without paying US import tariffs. Products manufactured within global value chains (GVCs) obtain the greatest cost-saving benefits from FTZs, as they typically cross borders repeatedly and would otherwise be subject to duties at each border. In the absence of FTZs, tariffs would pile up on GVC products because they are levied on the gross value of the item and not on the value added at each

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29 For a complete list of FTZs in the United States, see the "List of Foreign-Trade Zones by State".

30 For a list of FTZs in China, see the article "China: China Introduces New Free Trade Zones and Improved Practices", *International Tax Review*, 15 October 2019.

31 For a complete list of FTZs in the EU, see the document "Free zones which are in operation in the customs territory of the Union, as communicated by the Member States to the Commission", 20 December 2019.

32 Matt Gold, former US trade negotiator, affirmed that "in a world where trade barriers increase, FTZs become more valuable", see the article "Trump Erects Trade Barriers, and 'Foreign Trade Zones' Take Them Down", *Governing: The Future of States and Localities,* 6 March 2018.

33 For a brief overview of the advantages and disadvantages of FTZs, see "Special economic zones – Not so special", *The Economist,* 4 April 2015.

stage. According to the US National Association of Foreign-Trade Zones, roughly half of the costs firms save by locating in FTZs are due to tariff inversion avoidance.[34]

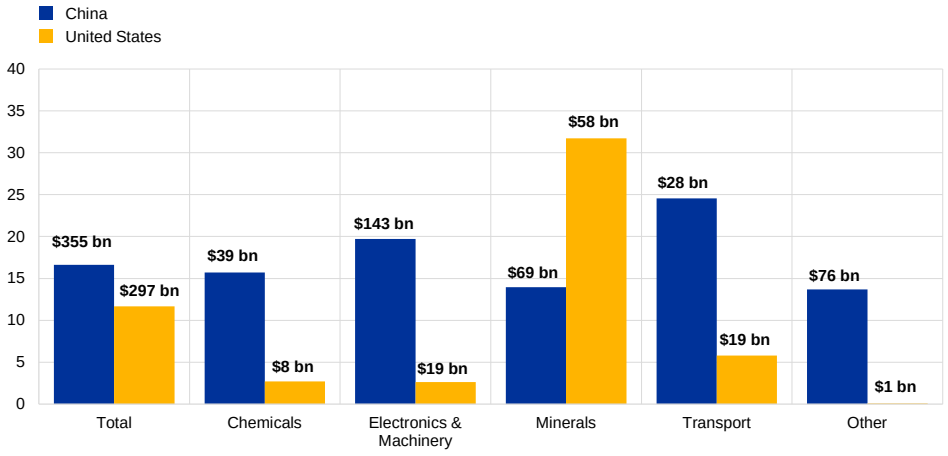
In the United States, FTZs handle a substantial share of total imports (around 38% in 2018). However, those imports that are considered to have "foreign status" and receive favourable treatment account for only 14% of total imports.[35] Around half of the foreign-status imports eventually enter US domestic borders for final consumption, while the rest are processed and re-exported. In 2018, 440,000 workers were employed in US FTZs. Besides oil, which transits through US FTZs for historical reasons, the bulk of imports entering the United States via FTZs are made up of electronic items, machinery and transportation goods with global production networks.[36] Foreign car makers take advantage of tariff inversion by locating inside FTZs.[37]

FTZs in China also account for a significant and growing share of overall trade. While relief from import duties is not currently a feature of FTZs in China, this has been under consideration and may change as part of the continued expansion of FTZs. In China, there are currently 12 large FTZs. These zones employ 4% of the workforce and handle goods representing around 17% of total Chinese imports. As in the United States, around half of these goods are for domestic consumption and half are for re-export. Electronics and machinery imported through FTZs account for 20% of imports in their respective sectors (see Chart A), while transport goods make up 25% of imports in that sector. Firms located in FTZs (as well as in other special economic zones) can also take advantage of looser capital controls and tax advantages.

Chart A

Chinese and US imports via FTZs in 2018

(foreign status imports as a share of total imports in each sector)



Sources: US Census, Trade Data Monitor and ECB staff calculations.

34 NAFTZ, "The US Foreign-Trade Zones Program: Economic Benefits to American Communities", 2019.

35 For more information on the definitions of "domestic status/duty paid" and "foreign status" goods, see the "Glossary of FTZ terms" produced by the US Foreign-Trade Zones Board.

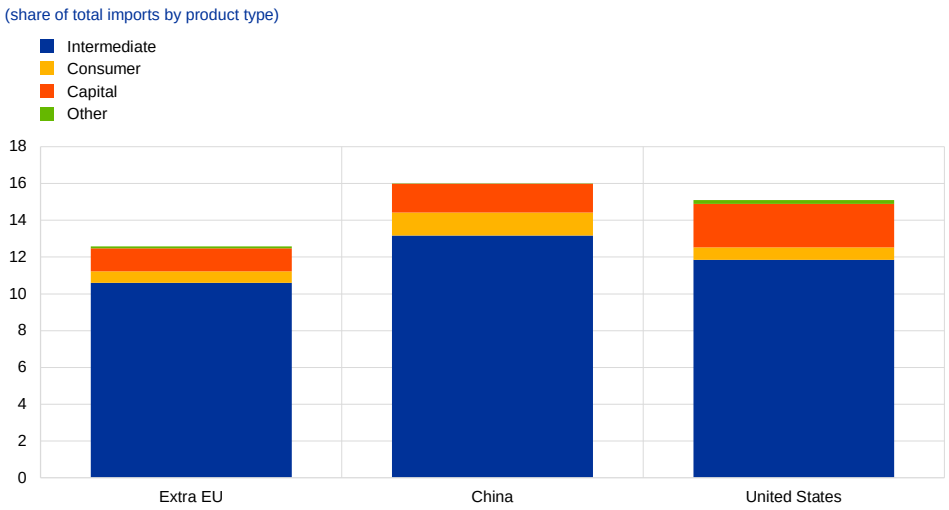
36 Oil imports represent two-thirds of all FTZ imports in the United States. Refineries are located in FTZs to bypass the historical ban on crude importing dating back to the 1930s, when the United States was still a net exporter of oil.

37 Tiefenbrun, S., "U.S. Foreign Trade Zones of the United States, Free-Trade Zones of the World, and their Impact on the Economy", *Journal of International Business and Law*, Vol. 12(2), 2013.

In the EU, no duty waiver is granted to imports passing through FTZs because FTZs are mainly used to smooth out customs processes – instead a similar effect is achieved via an import duty suspension scheme.[38] This scheme, introduced in 2013, guarantees a level playing field to companies operating in the EU irrespective of their geographical location. The share of euro area imports under suspension arrangements is comparable to imports through FTZs in other regions (12% of euro area imports are under suspension arrangements, while 17% of imports into China and 14% of imports into the United States take place through FTZs). In line with the original aim of FTZs, the duty suspension scheme primarily concerns intermediates. Capital goods benefit to a lesser extent, whereas consumer goods account for a negligible fraction of all euro area imports under suspension arrangements (see Chart B). However, since the ultimate scope is to support domestic production and the development of regional value chains, only items that are not produced within the EU can be granted duty suspensions; in particular neither cars nor car parts have ever been included on the suspension list.

Chart B

Euro area imports under import duty suspension arrangements in 2018



Sources: European Commission, Eurostat and ECB staff calculations.
Note: The list of suspensions is revised twice a year, and suspensions from customs duties can be granted for up to five years.

FTZs can cushion the impact of the US-China trade war, depending on the relative size of the tariffs on intermediates compared with those on final goods.[39] Increasing tariffs on intermediates relative to final goods generates a greater incentive to import through FTZs in the United States in order to take advantage of import duty exemptions. In the ongoing trade war between China and the United States, around 90% of Chinese intermediate goods were affected by a rise in US tariffs.[40] Protectionist measures increased the bilateral tariff rate by 14.2

[38] The rationale for this approach is that exemption from import duties using FTZs would constitute an unfair competitive advantage for companies located in FTZs compared with those located elsewhere in the EU.

[39] Siroën, J.M. and Yücer, A., "Trade Performance of Free Trade Zones", *Document de travail /Working paper*, No DT/2014-09, Université Paris-Dauphine, 2014.

[40] Protectionist measures against Chinese imports raised the bilateral effective tariff rates by 16.3 percentage points. However, following the announcement in December 2019 of a partial deal (entering into force in February 2020) and the subsequent easing of tensions, effective tariff rates rose by 14.2 percentage points.

percentage points and the increase in the average US tariff rate on intermediate goods from China is twice as high as the tariff rise on consumer goods (6 percentage points compared with 3 percentage points). The trade war has therefore made tariff inversion more pronounced and further increased the incentive to import through FTZs. Recourse to FTZs may have lowered the bilateral effective US-China tariff rate by up to 0.7 percentage points. Assuming all imported Chinese intermediates are rerouted through US FTZs, the bilateral effective US-China tariff rate may be up to 4.5 percentage points lower.[41]

[41] Inputs imported via FTZs for production in the United States were worth USD 130 billion in 2018. Assuming that the share of Chinese intermediates entering production in US FTZs is the same as the share of imported Chinese intermediates in total US intermediate imports, the cushioning effect of FTZs may be up to 0.7 percentage points. Furthermore, if we assume that all imported Chinese intermediates (USD 149 billion in 2017) are rerouted through FTZs, this could lead to a one-third reduction in the impact on the bilateral effective tariff. For example, this would result in a rise of 9.8 percentage points instead of 14.2 percentage points. Since the data on US FTZ trade composition are limited, we make assumptions about the share of imports of Chinese intermediates entering production in US FTZs. We also assume that all foreign inputs that enter FTZs for production are channelled towards the US domestic market for final consumption (i.e. not re-exported). In addition, we assume that all Chinese intermediate imports have been affected by a 25 percentage point increase in tariffs, while tariffs on consumer goods have only increased by 7.5 percentage points. These are reasonable assumptions, as 83% of Chinese intermediates in total US intermediate imports from China have been affected by a 25 percentage point increase in the tariff rate. At the same time, almost 70% of Chinese consumer goods in total US consumer goods imports from China have been targeted by an increase in tariffs equal to or lower than 7.5 percentage points.

4 Integration of non-euro area central and eastern European EU countries in global value chains, export dynamics, and business cycle synchronisation with the euro area

Prepared by Francesco Chiacchio and Andrejs Semjonovs

This box reviews developments in the six non-euro area central and eastern European EU countries (Bulgaria, the Czech Republic, Croatia, Hungary, Poland and Romania) with respect to trade integration and economic synchronisation with the euro area and investigates the potential exposure of their export dynamics to changing external conditions. In recent decades, in an environment of rapid economic globalisation and increasing trade integration, firms have unbundled their production processes and scattered their input sourcing across countries. This has been particularly true for the six countries under review, which have become increasingly integrated in cross-border value chains both globally and regionally. More specifically, access to the Single Market has entailed the removal of trade barriers, lower transport costs and harmonised EU-wide standards, which have provided a decisive stimulus for firms to fragment their production and assembly operations to take advantage of local production conditions.

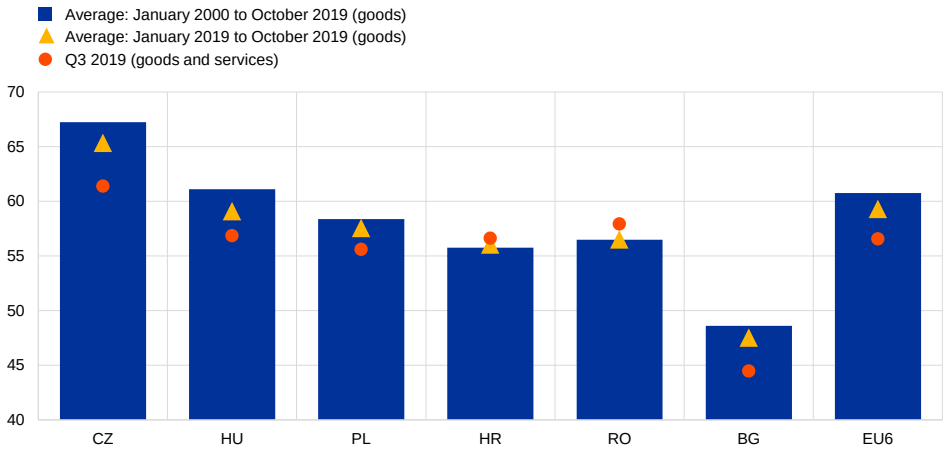
The six countries have strong trade ties and are well integrated with the euro area and the rest of the EU. Over the last 20 years, the euro area has been the destination of more than 55% of the total exports of the six countries (see Chart A). By 2014 around 45% of their gross exports to the euro area were related to global value chains (GVCs), i.e. containing either foreign value added or domestic value added for other countries' exports. Moreover, on average the six countries are positioned downstream[42] in euro area value chains (see Chart B), which suggests that the region is generally specialised in processing and assembly functions and that its overall export activities are therefore characterised by relatively low domestic value-added content and more intense use of foreign intermediate inputs.

[42] The position in global value chains reflects the relative proportion of two components of gross exports: (i) domestic value added embedded in other countries' exports (upstream GVC participation); and (ii) foreign value added embedded in own exports (downstream GVC participation). A country is situated downstream in the value chain when foreign inputs (in terms of value added) in the production of its exports are greater than the inputs it provides for the production of other countries' exports. See also Wang, Z., Wei, S.-J. and Zhu, K., "Quantifying International Production Sharing at the Bilateral and Sector Levels", *NBER Working Paper*, No 19677, November 2013.

Chart A

Share of exports from the six countries to the euro area

(percentages of total exports)

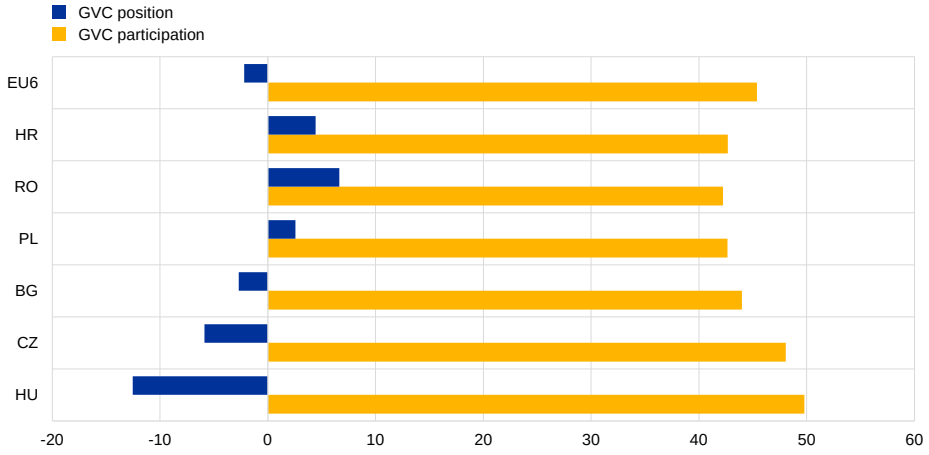


Source: Eurostat.
Notes: "EU6" refers to the aggregate of the six countries under review. The latest observations are for October 2019 (goods export data) and the third quarter of 2019 (goods and services export data).

Chart B

GVC participation and position in exports from the six countries to the euro area in 2014

(position – index; participation – percentages of total gross exports)



Sources: Eurostat, World Input-Output Tables (2016 release), Wang et al. (2013) and ECB staff calculations.
Notes: "EU6" refers to the aggregate of the six countries under review. The GVC position index is defined as 100*(ln(1+sDV) – ln(1+sFV)), where sDV is the share of domestic value added embedded in total gross exports and sFV is the share of foreign value added in total gross exports. In the purely hypothetical case of 100% domestic (foreign) value added, the position index maximum (minimum) value would therefore be 69 (-69). The higher the share of foreign value added, the lower the GVC position index; a negative value indicates a downstream position (as in the case of the EU6 aggregate), a positive value an upstream position (as in the cases of Croatia, Romania and Poland). GVC position and participation data are only available until 2014 and might not reflect current GVC positions and participation.

The openness of the six countries to international markets has increased gradually, while their GVC trade, which largely involves euro area partners, has been accelerating well above that of the euro area average. The high level of openness, which allowed the six economies to leverage on domestic production structures and reap vast benefits from integration, has also left them more exposed to cyclical developments and industry-specific shocks. In particular, stronger links with other European economies and the rest of the world have resulted in higher trade

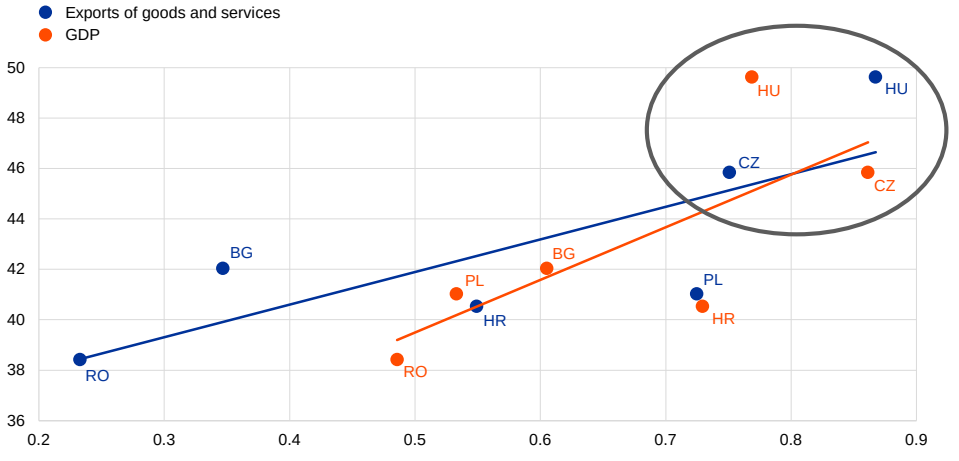
elasticities and more specialisation in specific sectors.[43] Moreover, value chain trade mainly involves durable investment goods, which are known to be more sensitive to cyclical developments.[44]

The six economies are now an integral part of European production networks, and net exports are a key driver of business cycle synchronisation with the euro area. Stronger trade, especially in intermediates, can support business cycle synchronisation, for example through a wider variety of products being traded.[45] High participation in regional production chains with the euro area appears to be an important catalyst for business cycle synchronisation with the euro area. As can be seen in Chart C, on average across the six countries in the period 2000-2014, a higher GVC participation in exports to the euro area (y-axis) is associated with higher correlation coefficients (x-axis) with both euro area output (red dots) and exports (blue dots). Synchronisation has been very high historically, particularly in Hungary and the Czech Republic.

Chart C

Trade integration and business cycle synchronisation of the six countries with the euro area

(y-axis: share of total gross exports to the euro area related to GVCs, percentages; x-axis: synchronisation with euro area GDP and export growth, correlation coefficient; 2000-2014)



Sources: Eurostat, World Input-Output Tables, Wang et al. (2013) and ECB staff calculations.
Notes: The chart depicts the relationship between the average GVC-related share in exports to the euro area and correlations in annual growth in exports of goods and services or GDP over the period 2000-2014. For example, almost 50% of Hungary's gross exports to the euro area were GVC-related (y-axis). At the same time, GDP and export growth in Hungary were highly correlated with euro area GDP and export growth (x-axis, correlation coefficient values close to the maximum of 1). A positive slope of the red/blue lines suggests that, on average for the six economies, a higher GVC-related share in exports to the euro area is associated with higher correlation with euro area GDP/export growth. The sample period is restricted to 2000-2014 owing to non-availability of GVC data after 2014.

However, in recent years, the business cycles of the six countries have somewhat decoupled from euro area economic activity (see Chart D). The decoupling may be attributed to local factors, such as robust domestic demand

43 See Draghi, M., "Welcome remarks", speech at the 8th ECB conference on central, eastern and south-eastern European countries, Frankfurt, 12 June 2019.

44 See Gunnella, V., Fidora, M. and Schmitz, M., "The impact of global value chains on the macroeconomic analysis of the euro area", *Economic Bulletin*, Issue 8, ECB, 2017.

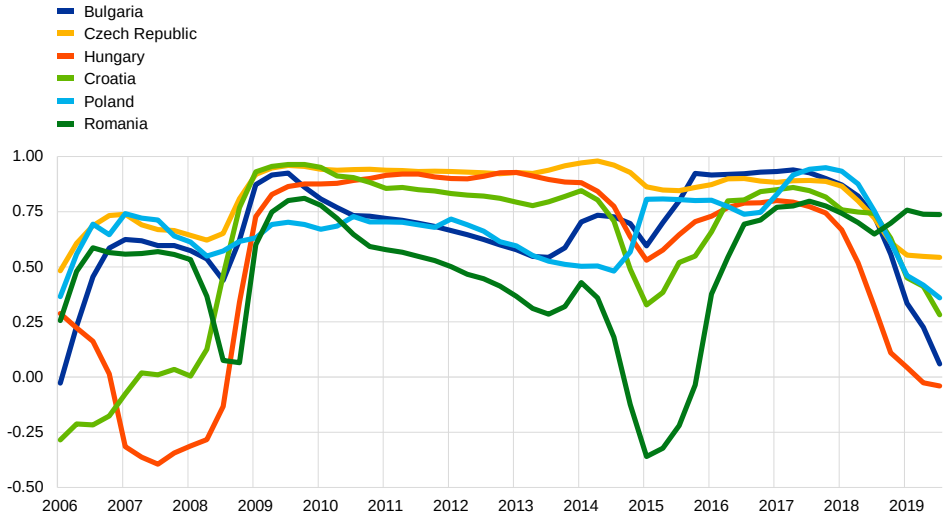
45 See, for example, Duval, R., Li, N., Saraf, R. and Seneviratne, D., "Value-added trade and business cycle synchronization", *Journal of International Economics*, Vol. 99, 2016, pp. 251-262; and Liao, W. and Santacreu, A.M., "The trade comovement puzzle and the margins of international trade", *Journal of International Economics*, Vol. 96(2), 2015, pp. 266-288.

supported by strong wage growth and increases in disposable income (as was broadly the case in all of the six economies). Moreover, the six economies are expected to grow faster than the euro area as a result of a catching-up process. This trend differential suggests that, in general, activity developments in the euro area may not be exactly mirrored in the six countries. Finally, lingering effects of past foreign direct investment in industry and the continued relocation of production from plants elsewhere in the EU to the six countries might also partially explain widening gaps in the short term, as detailed by the Magyar Nemzeti Bank in its September and December Inflation Reports in the case of Hungary.[46]

Chart D

Synchronisation of the business cycles of the six economies with euro area activity

(five-year rolling correlations between annual GDP growth rates in the six economies and in the euro area as a whole)



Sources: Eurostat and ECB staff calculations.
Notes: The chart reflects the extent of synchronisation in economic activity between the six economies and the euro area. For example, GDP growth in the Czech Republic was highly correlated with that of the euro area in the decade up to 2018 (as indicated by correlation coefficients close to the maximum value of 1), while it has become less correlated more recently.
The latest observation is for the third quarter of 2019.

The nature and final use of exports play an important role in explaining the correlation between exports of the euro area and the six countries. For example, the recently weaker export growth in Romania can be largely attributed to the automotive sector, which accounts for about one-third of goods exported to Germany. In particular, one of the main contributors to the downturn was auto parts and accessories, a sub-sector that is highly integrated in cross-border supply chains and dependent on the external demand of other countries. By contrast, a large part of Bulgarian exports to Germany are not re-exported but used for final consumption. Since the slowdown in Germany mainly stems from export-oriented industrial sectors, it has a more limited effect on Bulgaria's exports.

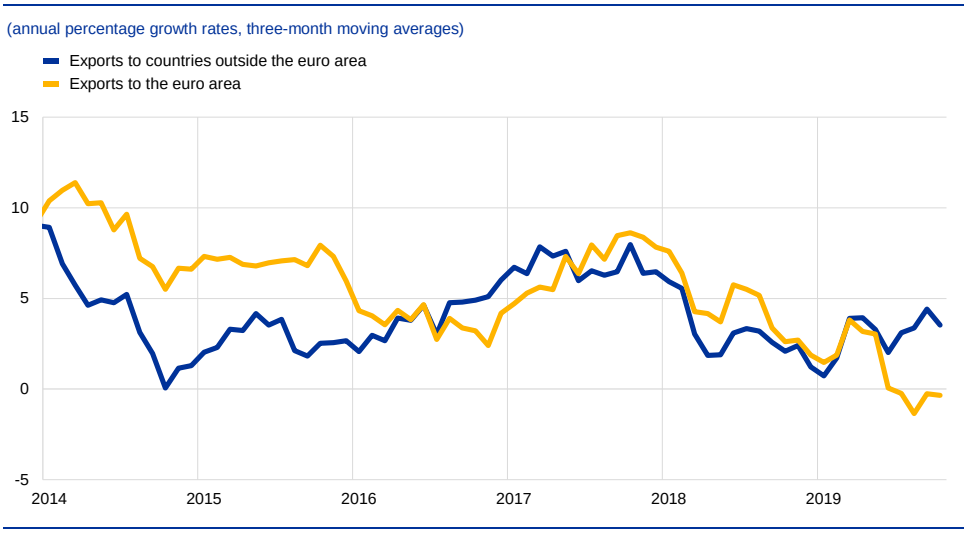
So far, the ongoing moderation in manufacturing, including in the automotive industry in Germany, and the escalation of trade tensions have been only partly

46 At the same time, Magyar Nemzeti Bank expected a negative impact of the slowdown in the German vehicle industry on the Hungarian economy via the real economy channel in the medium term (see *Inflation Report*, Magyar Nemzeti Bank, September 2019).

reflected in the six economies. Negative spillovers have been softened by factors such as buoyant domestic conditions, the product composition of exports, and the resilience of exports to countries outside the euro area (see Chart E). Given the high trade openness and strong economic ties with the euro area, the overall effect may still be significant in the medium term, particularly for exports.

Chart E

Goods exports, aggregate for the six economies



Sources: Eurostat and ECB staff calculations.
Note: The latest observation is for October 2019.

Reforms encouraging a more balanced growth path would cushion potential vulnerabilities to changes in external conditions. Deeper capital accumulation and reliance on domestic innovation will help consolidate the benefits of integration and ensure a steady convergence path in the long run.[47] High-quality domestic institutions and governance are thus critical to lasting economic success; and structural policies promoting, for example, investment in human capital and a strengthening of anti-corruption efforts would be a step in this direction.[48]

47 See Draghi, M., "Welcome remarks", op. cit.

48 See Lagarde, C., "Strengthening the Economic Engine: Prosperity and Resilience of CESEE Economies in a Changing Trade Landscape", keynote speech at the 8th ECB conference on central, eastern and south-eastern European countries, Frankfurt, 12 June 2019.

5 Bond market liquidity and swap market efficiency – what role does the repo market play?

Prepared by Jan Philipp Fritsche, Michael Grill and Claudia Lambert

This box assesses the relevance of repo markets for bond and swap markets, thereby adding to the discussion on the role of repo markets in the wider financial system. In a repurchase agreement, or "repo", securities are sold and an agreement is entered into to repurchase them at a later date. Typically, repos are used by market participants to obtain funding using bonds as collateral. They can also be used to source specific securities against cash collateral. Repo markets play a key role in facilitating the flow of cash and securities around the financial system, thereby providing liquidity to other markets. [49] A well-functioning repo market supports the implementation of monetary policy as it propagates interest rate decisions through the financial system. At the same time, turmoil in repo market may spill over to other markets and amplify financial market stress. This box is concerned with the effects of repo market disruptions on bond markets and the interest rate swap market. Given the importance of these markets in the financial system, their proper functioning and the potential for repo market turmoil to affect it matters from both a financial stability and a monetary policy perspective.[50]

The analysis provides empirical evidence that repo market liquidity is an important determinant of bond market liquidity and arbitrage opportunities in swap markets. Repo market liquidity plays a key role in supporting the liquidity of bonds used as collateral in repo transactions. This important link between funding and market liquidity has been discussed since the seminal contribution by Brunnermeier and Pedersen.[51] Repo markets also play an important role in the pricing and hedging of interest rate swaps.[52]

The box investigates the effects of a sudden reduction in repo market liquidity at the end of a quarter on the liquidity of bond markets and arbitrage in swap markets. Repo market liquidity generally falls at quarter or year-ends. This is primarily driven by banks "window-dressing", i.e. making balance sheet adjustments to improve

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49 See "Repo market functioning", *CGFS Papers*, No 59, Committee on the Global Financial System, 2017.

50 Bond market liquidity plays a crucial role in the conduct of monetary policy and the stability of the financial system. Monitoring bond market liquidity conditions as well as the factors that determine how they are affected by market stress is of vital importance. See "Fixed income market liquidity", *CGFS Papers*, No 55, Committee on the Global Financial System, 2016. Swaps represent the largest derivative market in terms of the notional amount of outstanding trades and play an important role in particular for the hedging of interest rate risk. See, e.g., Fontana, S., Holz auf der Heide, Pellizon, L. and Scheicher, M., "The anatomy of the euro area interest rate swap market", *Working Paper Series*, No 2242, ECB, Frankfurt am Main, February 2019, for a discussion of the significance of this market.

51 See Brunnermeier, M.K. and Pedersen, L.H., "Market Liquidity and Funding Liquidity", *The Review of Financial Studies*, Vol. 22, No 6, 2009, pp. 2201-2238 as one of the earliest papers and Huh, Y. and Infante, S., "Bond Market Intermediation and the Role of Repo", *Finance and Economics Discussion Series*, 2017-003, Board of Governors of the Federal Reserve System, Washington, 2017 for a more explicit link between repo markets and the bid-ask spread of bonds.

52 See e.g. "What is the role of repo in the financial markets", International Capital Market Association, 2019.

specific regulatory metrics that they need to report and disclose on these days.[53] As repos typically have a very short maturity (one to five days), they are often used to swiftly adjust the balance sheet of a bank by reducing leverage at quarter and year-ends, affecting the repo markets as transaction volumes drop.[54]

The results of the first exercise show that bond market liquidity – measured by bid-ask spreads – decreases significantly when repo markets are facing a sudden reduction in liquidity. The bid-ask spread is the difference between the bid price and the ask price of a security. It is a measure of transaction costs and tends to decrease when a security is more liquid. Chart A shows that during the last few trading days of 2018 (when repo market liquidity significantly dropped) the bid-ask spread increased significantly for bonds which are used very often as collateral in repo markets and hence are judged to generally benefit from funding liquidity in the repo market (represented by the "treatment group"). Bonds which are very infrequently used as collateral and therefore do not benefit from funding liquidity in the repo market (the "control group") were not affected and their bid-ask spread remained at the same level.[55] These results are confirmed using an estimated model which measures the difference between the increase in the bid-ask spread for the treatment group and the increase for the control group.[56] Table A shows the regression results for the five quarters considered. The bid-ask spread increase is significantly higher for the treatment group at all quarter-ends, and even more so at year-end.[57]

53 For example, the reporting and disclosure of the Basel III leverage ratio at quarter-ends and the calculations of banks' scores in the global systemically important bank (G-SIB) framework at year-end are based on snapshots of balance sheets on a single day. This provides incentives to reduce balance sheets around these dates. See Basel Committee on Banking Supervision, "Statement on leverage ratio window-dressing behaviour", October 2018, and Behn, M., Mangiante, G, Parisi, L. and Wedow, M., "Behind the scenes of the beauty contest: window dressing and the G-SIB framework", *Working Paper Series*, No 2298, ECB, Frankfurt am Main, July 2019.

54 See e.g. Grill, M., Jakovicka, J., Lambert, C., Nicoloso, P., Steininger, L. and Wedow, M., "Recent developments in euro area repo markets, regulatory reforms and their impact on repo market functioning", *Financial Stability Review*, ECB, Frankfurt am Main, November 2017.

55 The treatment and control groups are identified using transaction-level repo data for the 50 largest euro area banks from the ECB's money market statistical reporting (MMSR) database. For each quarter, the 500 bonds most frequently used as collateral in the repo market are identified as the treatment group. For this set of bonds, the repo market can be considered an important provider of funding liquidity. The control group comprises bonds used so infrequently as collateral that they do not benefit from any funding liquidity provided by the repo market. The dataset contains both general collateral and special collateral trades. All transactions where an International Securities Identification Number (ISIN) is reported for the collateral – the large majority – are considered.

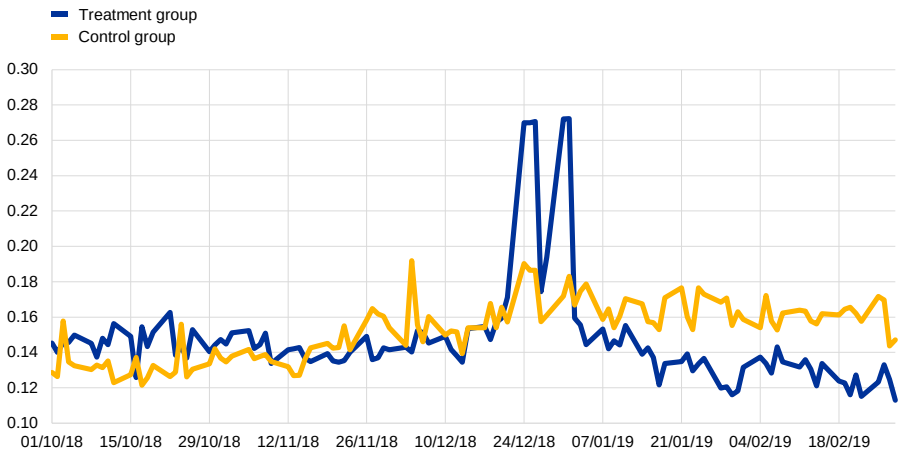
56 On the basis of the treatment and control groups defined above, a difference-in-differences estimation technique conditional on propensity score matching is employed. While there are structural differences in the liquidity of the bonds in the two groups, these structural factors are constant over time and the difference-in-differences approach is able to control for the time-invariant factors. The matching procedure ensures that the two groups of bonds are similar before quarter-ends and thus that the results do not reflect systematic differences between them. In particular, bonds are matched on the basis of key characteristics that determine liquidity such as life to maturity, the modified duration, the yield, the market value and the spread to a government benchmark of the bond. The difference-in-differences model also includes time fixed effects and bond fixed effects.

57 These results are in line with Munyan, B., Regulatory Arbitrage in Repo Markets, *Office of Financial Research Working Paper Series*, No 15-22, 2015, where similar effects on the bid-ask spread are found for US agency bonds.

Chart A

Bid-ask spread of the treatment and control groups at the end of 2018

(percentage points)



Sources: ECB (money market statistical reporting dataset) and Thomson Reuters.
Notes: The y-axis shows the spread between the bid and the ask price. It is calculated for each security and then averaged for the treatment and the control group respectively.

Table A

Effects of lower repo market liquidity on the bid-ask spread per quarter

(basis points)

	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018
Relative change in bid-ask spread	15.3***	16.2***	28.8***	-0.87	78.3***
Adjusted R^2	0.02	0.02	0.01	0.01	0.01

Source: ECB staff calculations.
Notes: The table shows the result of a difference-in-differences type of regression on bid-ask spreads. The estimated coefficient measures the difference between the increase in the bid-ask spread for the treatment group and the increase for the control group. *** denotes significance at the 1% level.

The second exercise looks at the impact of lower repo market liquidity on arbitrage opportunities in swap markets. Figure A depicts the interlinkages of the markets in a transaction where an arbitrage strategy is pursued to exploit a negative swap spread.[58] The market participant first buys a bond in the bond market, funded with liquidity from the repo market,[59] then enters a swap and pays a fixed rate. If, for example, the bond has a yield of 1%, the market participant can enter a swap with the obligation to pay a fixed rate of 0.9% and earn the 0.1 percentage point difference[60] (as a result of which the negative swap spread should ultimately disappear). This arbitrage scheme is, however, only economically viable if market participants can rely on well-functioning repo and bond markets.

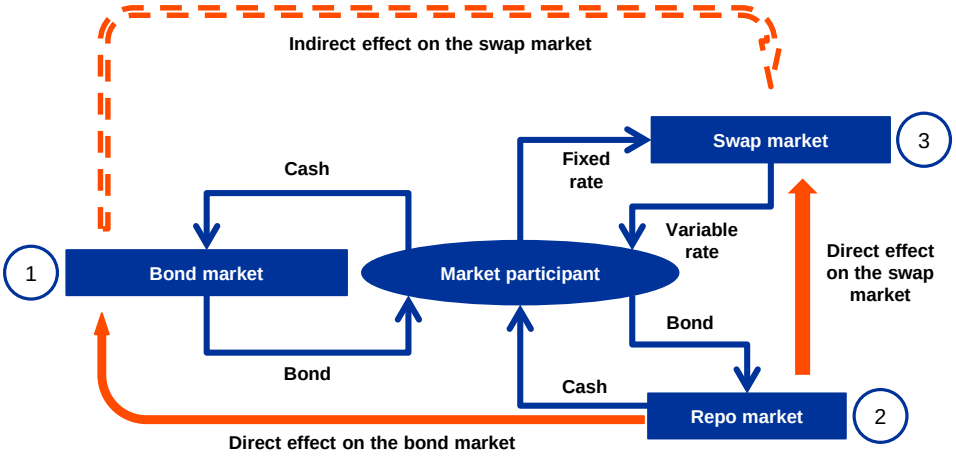
58 The swap spread is defined as the difference between the fixed rate of an interest rate swap and the yield of the underlying bond.

59 The bond can be pledged as collateral in a repo.

60 This is abstracting from counterparty risk, default risk, the hedging costs and transaction costs.

Figure A

Stylised illustration of an arbitrage trade for negative swap spreads[61]



Source: ECB staff.
Notes: The diagram depicts a set of arbitrage transactions where a market participant first buys a bond in the bond market and then funds the transaction in the repo market. The market participant then enters a swap, pays a fixed rate and receives a variable rate.

Theory predicts that frictions in the repo markets will result in a decrease in the swap spread. Recent research would predict that a sudden reduction in repo market liquidity at the end of a quarter decreases arbitrage opportunities in swap markets.[62]

Swap traders can be affected by the repo market directly and indirectly. They may be affected directly when they use the repo market to fund a bond transaction, and they may be affected indirectly when the liquidity of the bond market changes as a result of changes in the liquidity of the repo market. Below, the effect on the swap market via the bond market is referred to as the indirect effect, and the effects from the repo market on the bond market are referred to as the direct effect.

The empirical analysis shows that swap spreads decrease significantly, even if they are already negative, when both repo markets and bond markets become less liquid. An estimated model shows that the swap spread for the treatment group decreases by up to 13 basis points relative to the control group, through the direct effect (see Table B). Notably, the indirect effect is more pronounced at some quarter-ends. This shows that a reduction in either repo or bond market liquidity leads to lower swap market efficiency.

61 A more detailed diagram can be found in Boyarchenko, N., Gupta, P., Steele, N. and Yen, J., "Negative Swap Spreads", *Federal Reserve Bank of New York Economic Policy Review*, Vol. 24, No 2, October 2018.

62 The model presented in Jermann, U., Negative Swap Spreads and Limited Arbitrage, *The Review of Financial Studies*, Vol. 33, No 1, 2020, incorporating frictions for bond holding and repo financing, would predict that lower liquidity in the repo markets at quarter-ends decreases the arbitrage opportunities in the interest rate swap markets and allows the swap spread to decrease, even into negative territory (see also the references in that paper). Similarly, Boyarchenko, N. et al., op. cit. examines in detail how much swap spreads would need to decrease before a bond-swap trade to arbitrage away negative swap spreads becomes profitable.

Table B

Direct and indirect effects of repo market liquidity shortfalls on the swap spread per quarter

(basis points)

	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018
Direct effect	-0.954**	-9.294***	1.864*	2.500***	-12.79***
Indirect effect	0.0690	-13.36**	-8.525**	-17.35***	-28.30***
Adjusted R^2	0.26	0.25	0.19	0.14	0.12

Source: ECB staff calculations
Notes: The table shows the result of a difference-in-differences type of regression on swap spreads. The direct effect measures the effect of repo market liquidity shortfalls on the swap spread, without taking the reaction of the bond market into account. The indirect effect measures the reaction of the swap spreads of the treatment group to bond market bid-ask spreads when repo market liquidity decreases. The coefficients imply that swap spreads decrease particularly when it is difficult to obtain the bond in the bond market and fund it in the repo market.
Controls: the life to maturity, the modified duration, the market value and the spread to a government benchmark of the bond. The regression also includes time fixed effects and bond fixed effects
*, ** and *** reflect significance at the 10%, 5% and 1% levels respectively.

Overall, the analysis presents evidence on the links from repo markets to bond and swap markets. It shows the potential of repo market disruptions to spill over to other markets by increasing volatility of bid-ask spreads in bond markets and limiting the potential for arbitrage in swap markets. From a financial stability perspective, ensuring the resilience and sustainability of repo markets in order to limit the potential for sudden disruptions and the amplification of stress in key markets such as the bond and swap market is therefore a relevant goal for policymakers. The potential for repo market turmoil to spill over to other markets matters also from a monetary policy perspective, as interest rate volatility can impair the transmission mechanism. Finally, the results reinforce the need to implement the recent recommendations of the Basel Committee on Banking Supervision aimed at reducing window-dressing incentives by using quarter averages for the reporting and disclosure of the leverage ratio.[63]

[63] See "Revisions to leverage ratio disclosure requirements", Basel Committee on Banking Supervision, June 2019.

6 Business outlook surveys as indicators of euro area real business investment

Prepared by Eduardo Maqui

Investment survey indicators can be useful for assessing business investment developments in the euro area. The Global Business Outlook Survey on future business conditions is produced by IHS Markit on a triannual basis, with data collected in February, June and October, thus providing more timely information compared with other available investment surveys. As indicated by IHS Markit, questionnaires are sent to a representative panel of manufacturing and services sector firms, which are carefully selected to reflect the economic structure of each country in terms of sectoral contribution to GDP, regional distribution and firm size. Furthermore, its harmonised methodology allows for direct comparisons of business expectations across euro area countries, which is particularly useful for monitoring ongoing developments in business investment and policy assessments.

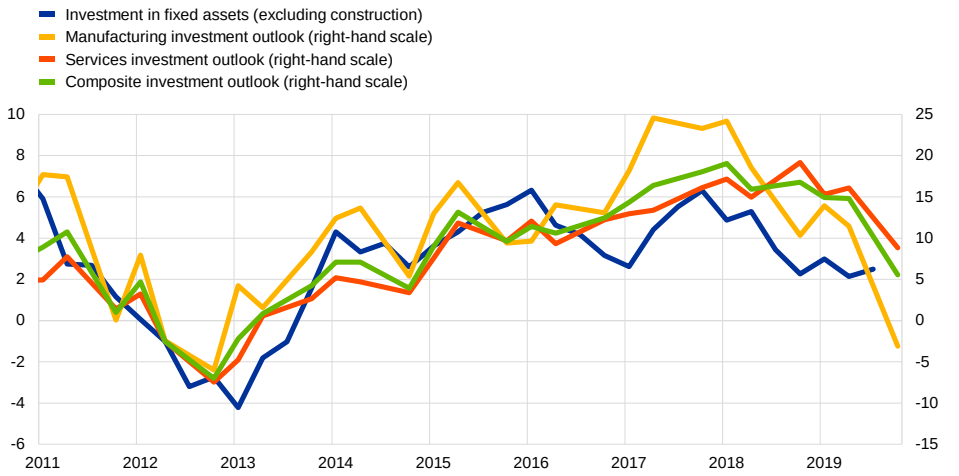
The outlook for manufacturing investment has deteriorated since mid-2018, indicating subdued business investment in a context of heightened global uncertainty and sector-specific challenges (see Chart A). Indicators have shown divergences in the business investment outlook across sectors over the past few years, with the sharp downward trend in manufacturing being accompanied by a delayed, and more contained, decline in the investment outlook for services. Growing uncertainty related to geopolitical events, such as Brexit and the further escalation of trade tensions, have been reported to adversely affect investment in the latest European Investment Bank's (EIB) Investment Report and Survey.[64] The report furthermore indicates that the political and regulatory environment also appears to be weighing on the investment outlook. Moreover, muted business investment is expected owing to continued uncertainty surrounding sector-specific challenges, including those in the motor vehicle industry.

[64] See the EIB Investment Report 2019/2020: accelerating Europe's transformation and the 2019 EIB Investment Survey.

Chart A

Euro area investment outlook across sectors and real business investment

(left-hand scale: year-on-year growth rate; right-hand scale: net balance)



Sources: IHS Markit, Eurostat and ECB calculations.
Notes: Investment in fixed assets (excluding construction) represents the aggregate of the four largest euro area countries (Germany, Spain, France and Italy). Historically, they account for, on average, around 75% of the euro area-19 total business investment. The latest observations are for the third quarter of 2019 for real business investment in fixed assets (excluding construction) and October 2019 for the business investment outlook series. The net balance figure of the business investment outlook indicator is calculated by deducting the share of surveyed firms expecting a deterioration over the next 12 months from the share of respondents expecting an improvement. Net balance values vary between -100 and 100. Values above 0 therefore indicate a positive outlook amongst firms regarding business investment in the coming 12 months, while values below 0 can be interpreted as a deterioration and a value of 0 as a neutral outlook.

Business expectations available as of October 2019 point to a further deterioration in the euro area outlook for manufacturing investment in the near term. The composite investment outlook (albeit in positive territory) declined substantially in October, driven by contractionary manufacturing investment expectations (in negative territory for the first time since 2012), in parallel with a non-negligible decline in services investment expectations. This is in line with the latest evidence from the biannual European Commission's (EC) Industrial Investment Survey, in which expectations for annual manufacturing investment growth in 2019 were revised downwards significantly in the euro area, from 4% in the April 2019 survey to -2% in November 2019.[65] According to the survey results, subdued investment is expected in most industrial sectors, with large industrial firms accounting for the downward revision to investment plans in 2019. Furthermore, according to the 2019 EIB Investment Survey, the number of manufacturing firms planning to reduce investment in 2019 had increased for the first time in the past four years.[66]

Country and sectoral-level survey results point to the German manufacturing sector as a key driver behind the waning outlook for capital expenditure. The latest Business Outlook Survey results from October 2019 suggest differences across countries and sectors, with an investment outlook that remains positive in France and Italy, while there appears to be a marked deterioration in investment expectations in Germany and Spain. Overall, business investment in the euro area is expected to remain supported by the services sector, somewhat buffering the decline in manufacturing investment (see Chart B, left-hand panel). The outlook for R&D

65 See EC business and consumer surveys.

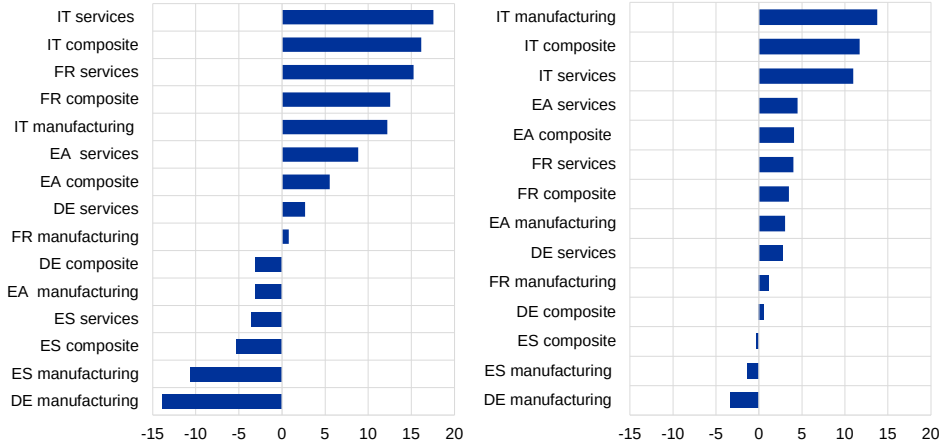
66 See the EIB Investment Report 2019/2020: accelerating Europe's transformation.

investment is also heterogeneous (see Chart B, right-hand panel). However, survey indicators have been broadly declining in recent survey waves, both across countries and sectors, with the latest results suggesting a rather subdued picture overall. Looking ahead, the EC Industrial Investment Survey suggests a somewhat better euro area investment outlook for 2020 compared with 2019, returning to positive territory, albeit still at a slow pace.

Chart B

Business outlook for capital expenditure and investment in R&D across countries and sectors

(left-hand panel: business outlook for capital expenditure; right-hand panel: investment in R&D; net balance)



Sources: IHS Markit and ECB calculations.
Notes: ES services data are not available. The latest observation is for October 2019.

Articles

1 Household wealth and consumption in the euro area

Prepared by Gabe de Bondt, Arne Gieseck and Mika Tujula

1 Introduction

Household wealth is the difference between the value of a household's assets and the value of its liabilities and is one of the key determinants of private consumption. Increases in wealth can affect private consumption in the short run, as households may feel richer and become more confident. Moreover, the level of household wealth is an important factor driving longer-term consumption choices and growth. Together with future expected labour income, it determines the level of life-long resources available to households. As private consumption is by far the largest contributor to total economic activity, household wealth may have a substantial impact on the state of the economy and, ultimately, on the outlook for inflation. In turn, monetary policy may have an impact on wealth developments, not only via its impact on asset prices but also through transmission channels. Therefore, it is important to consider levels of and changes in wealth when determining the appropriate monetary policy stance.

The potential importance of household wealth has led to a rich theoretical and empirical literature on its effects on private consumption. There is abundant literature on wealth effects in the United States and other individual countries which has produced a wide range of estimated elasticities of private consumption to wealth.[67] This article focuses on the effect of household wealth on the euro area economy and its four largest countries. The article primarily makes use of sector accounts data, which provide a detailed overview and consistent recording of non-financial and financial transactions and balance sheets at the institutional sector level in the euro area and in its member countries.

This article focuses on wealth effects at the aggregated household sector level rather than on wealth effects at the household level. Apart from the above-mentioned macroeconomic channels, which consider the impact on consumption of changes in the wealth of the total household sector, wealth can also have macroeconomic effects through distributional changes at the micro and individual household level. For example, if rising wealth accrues mostly to rich households, it would add to inequality and its macroeconomic impact might also be more limited, as rich households tend to have a lower marginal propensity to consume and might not step up their spending significantly.

[67] For an overview of US-oriented literature, see Cooper, D. and Dynan, K., "Wealth effects and macroeconomic dynamics", *Journal of Economic Surveys*, Vol. 30(1), 2016, pp. 34-55.

Section 2 describes developments in household wealth since 1999 based on the sector accounts and refers briefly to the distribution of wealth across households in 2014 based on the Eurosystem's latest available Household Finance and Consumption Survey. Section 3 provides estimates of wealth effects and the role they have played in recent years. Section 4 concludes with a look at monetary policy implications.

2 Household wealth developments

The sector accounts provide a comprehensive framework for the analysis of household wealth developments. The financial accounts include detailed information on financial positions, financial transactions and other flows in the economy, by institutional sector and financial instrument. Non-financial accounts contain, inter alia, data on income, consumption, savings, investment and non-financial asset holdings.[68]

Households hold non-financial and financial wealth. Non-financial wealth mostly reflects dwellings and land underlying dwellings owned by households, but also includes assets owned by unincorporated household enterprises.[69] Non-financial assets can provide important additional resources, either through their sale or refinancing or as income via, for example, the letting of residential property. Owner-occupied dwellings also have, in principle, an effect on consumption insofar as the owner does not have to pay rent and thus has more money for other consumption. In the national accounts, this is taken into account by considering rent as consumption of services and imputing consumption and income flows of the same amounts to the owners of owner-occupied dwellings. It is important to note that landlords are better off as a result of higher house prices, whereas current and future tenants are worse off. However, tenants and landlords balance each other out, meaning that, on average, the inhabitants of a country own the dwellings in which they live, so there is no economy-wide housing wealth effect from this perspective.[70] Financial wealth consists of financial assets, such as holdings of deposits, bonds, equity and investment fund shares. These are an important source of cash flow, either through the sale of such assets or through investment income (such as interest and dividends). However, pension entitlements are only included in the financial wealth of households in the sector accounts if they relate to (funded) employment-related private or civil service schemes. Social security pensions, which consist primarily of pensions related

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68 For an overview of data availability, see 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) and Guideline of the ECB of 25 July 2013 on the statistical reporting requirements of the ECB in the field of quarterly financial accounts (recast) (ECB/2013/24) (OJ L 2, 7.1.2014, p. 34). See also "European system of accounts – ESA 2010", Eurostat, European Commission, 2013.

69 To improve comparability across countries, non-financial wealth includes only housing wealth in this section, as data on other types of non-financial wealth are not available for all countries. This means that the assets owned by unincorporated businesses are not included.

70 This is the case if the role of non-residents in owning and letting housing in the country is limited.

to pay-as-you-go systems and make up the bulk of the total estimated stock of pension entitlements in nearly all euro area countries, are not included in household wealth.[71]

Household wealth is typically captured by the sector accounts concept "households' net worth", which is the value of the total assets of households minus the value of their total outstanding liabilities. Any changes in the stock of wealth over a period are the result of three components: net acquisitions of assets, valuation changes and other volume changes. Net acquisitions of non-financial assets mostly reflect net purchases less depreciation of dwellings and correspond to net housing investment; net acquisitions of financial assets are the net investment in those assets. Valuation changes are mostly captured by the development of house prices (for non-financial assets) and equity prices.[72]

The stock of households' net worth in the euro area amounts to around seven times annual disposable income, highlighting the importance of wealth for household economic resources. Chart 1 shows that households' net worth increased strongly from some 550% of disposable income in 2002 to around 700% in 2007, after having remained broadly stable in 2000-01, when the bursting of the dotcom bubble and the September 2001 terrorist attacks dampened financial wealth growth considerably. The rise in net worth between 2002 and 2007 mostly reflected the strong housing market dynamics and house price increases witnessed in several countries during this period, which resulted in a marked increase in housing wealth that was partly financed by increased debt.[73] Thereafter, as the global financial crisis erupted and concerns about the sustainability of prevailing asset price levels and private sector indebtedness increased, households' net worth declined significantly as a percentage of disposable income, reflecting declines in both financial and housing wealth. The decline in households' net worth amounted to €1.7 trillion between mid-2008 and early 2009. Following the strengthening of the economy and a recovery in asset prices, net worth increased slightly in 2009-10, before moderating again in the context of the European sovereign debt crisis, when net worth contracted by some €0.5 trillion between mid-2011 and early 2013. Since 2013 households' net worth has increased steadily, and it stood at 710% of disposable income in mid-2019. Net worth growth has been supported by a further easing of monetary policy, resulting in an easing of financing conditions. This, together with the strengthening of the world economy, has led to an improvement in the euro area economy, higher asset prices and increases in housing and financial wealth.

71 See "Accrued-to-date pension entitlements in social insurance", published by Eurostat. See also Box 2 in the article entitled "Social spending, a euro area cross-country comparison", *Economic Bulletin*, Issue 5, ECB, 2019.

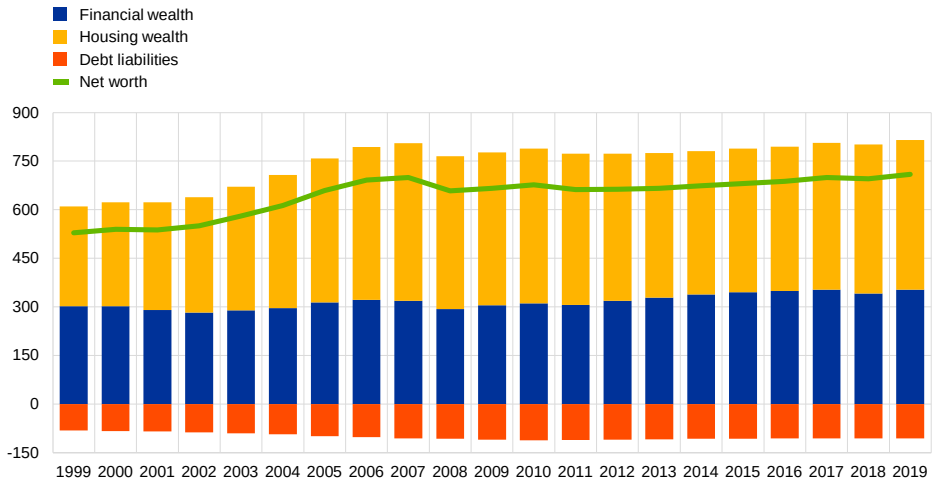
72 Other volume changes relate to: (i) normal appearance and disappearance of assets and liabilities other than by transactions; (ii) changes in assets and liabilities due to exceptional events which are not economic in nature; and (iii) changes in statistical classification and structure. For valuation changes, movements in asset prices other than house and equity prices may also play a role.

73 See Hofmeister, Z. and van der Helm, R., "Estimating non-financial assets by institutional sector for the euro area", *Statistics Paper Series*, No 23, ECB, May 2017.

Chart 1

Households' net worth, assets by component and debt liabilities in the euro area

(stocks; percentages of nominal gross disposable income)



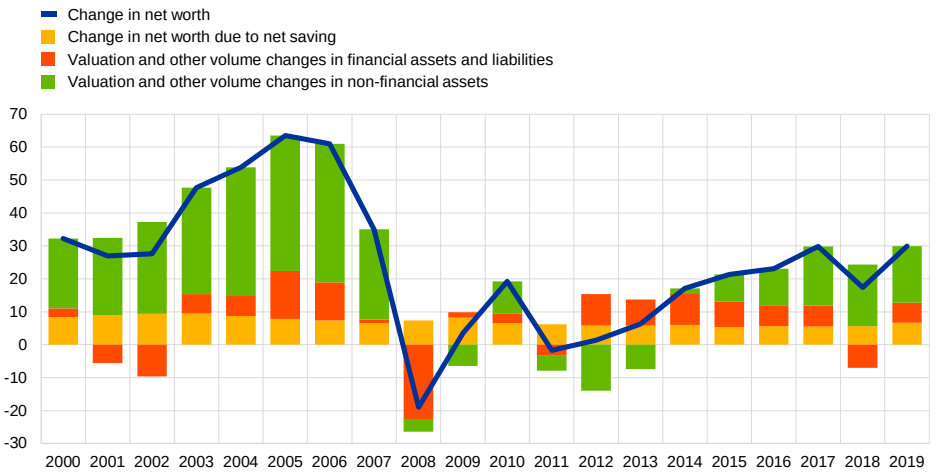
Sources: Eurostat, ECB, ECB estimates and ECB calculations.
Notes: Households' net worth is defined as the sum of their housing wealth and financial wealth net of their debt liabilities. Households' housing wealth includes dwellings and land underlying dwellings. Debt liabilities are defined as total liabilities net of equity issued and mainly consist of loans received from banks. The latest observations are for the second quarter of 2019.

Changes in the net worth of euro area households are primarily driven by valuation gains and losses on real estate holdings. Chart 2 shows that their impact on net worth growth was particularly strong during the housing market booms experienced in a number of countries between 2002 and 2007 and between 2017 and mid-2019. Capital gains and losses on financial asset holdings have occasionally also significantly affected net worth growth. This was especially the case during 2001-02 when the dotcom bubble burst, in September 2001 in the wake of the terrorist attacks and in 2008 after the global financial crisis erupted. In contrast, the contribution of net savings to net worth growth remained relatively stable between 2000 and mid-2019. Chart 3 shows that valuation gains and losses on households' real estate and financial asset holdings have followed changes in house and stock prices very closely, with correlations of 0.96 and 0.92, respectively. In addition, house price volatility is lower than stock price volatility and the house price cycle can deviate substantially from the stock price cycle.

Chart 2

Changes in the net worth of households in the euro area

(annual flows; percentages of nominal gross disposable income)

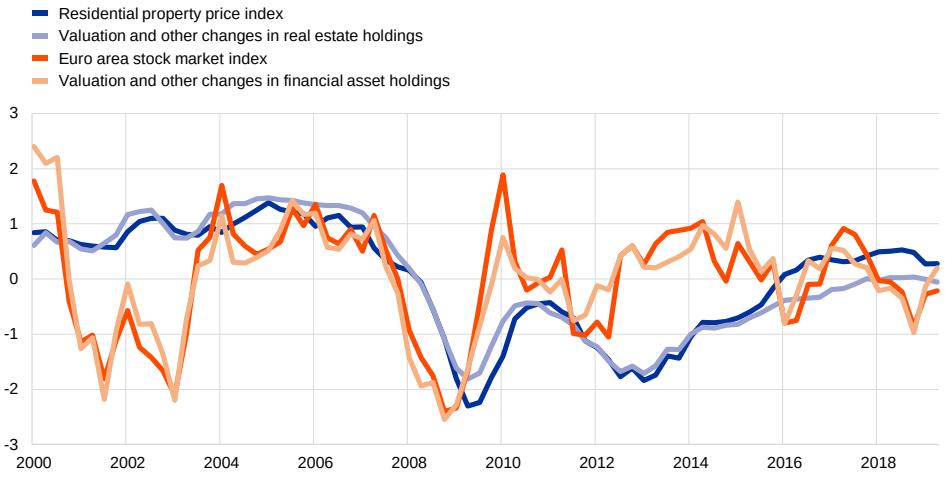


Sources: Eurostat, ECB and ECB calculations.
Notes: Change in net worth due to net saving comprises net saving, net capital transfers received and the discrepancy between the non-financial and the financial accounts. Valuation and other volume changes in financial assets and liabilities mainly comprise holding gains and losses on shares and other equity. Valuation and other volume changes in non-financial assets mainly comprise holding gains and losses on real estate (including land). The latest observations are for the second quarter of 2019.

Chart 3

Valuation changes in household non-financial and financial asset holdings and movements in asset prices in the euro area

(standardised annual percentage changes)



Sources: Eurostat, ECB, Thomson Reuters and ECB calculations.
Notes: The standardised annual percentage changes have been calculated by dividing the deviation of annual percentage changes from their mean by their standard deviation. The latest observations are for the second quarter of 2019.

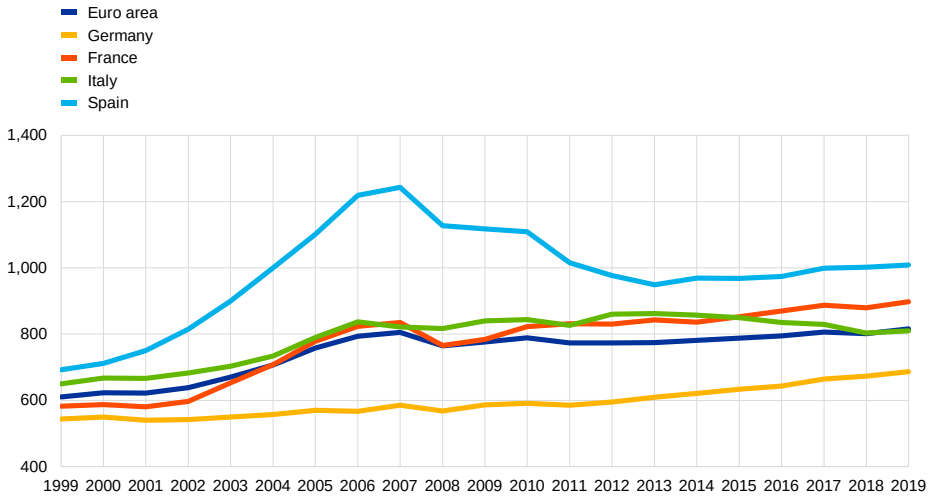
Aggregate euro area household wealth developments have masked marked heterogeneity between countries in terms of both levels and dynamics. Chart 4 shows that, in Spain, the level of households' total assets has been substantially higher as a percentage of disposable income than in other large euro area economies since the introduction of the euro. Households' total asset holdings also increased at a markedly faster pace in Spain than in other countries between 2000 and 2007, supported by the housing market and credit boom, before moderating strongly

between 2008 and 2013 following the subsequent bust and the necessary deleveraging of the banking and non-financial private sectors. At the same time, the fall in the assets-to-income ratio in Spain over this period was dampened by a strong decline in disposable income. In Germany, households' total asset holdings have remained significantly lower as a percentage of income than in other large member countries. However, in recent years they have been growing at a considerably faster pace than in other countries, benefiting from robust housing market dynamics.[74]

Chart 4

Households' total assets in the largest euro area countries

(stocks; percentages of nominal gross disposable income)



Sources: Eurostat, Bank of Spain, ECB estimates and ECB calculations.
Notes: Households' total assets are defined as the sum of their housing wealth and financial wealth. Housing wealth includes dwellings and land underlying dwellings. The latest observations are for the second quarter of 2019.

The composition of household wealth varies significantly across countries.

Chart 5 shows that the share of housing wealth in euro area households' total assets increased from some 50% in 1999 to around 62% in 2008, supported by strong housing market dynamics and house price increases in a number of countries. Thereafter, the share declined until 2016, before increasing again slightly and stabilising close to the average pre-crisis level. Throughout this period the share of housing wealth in total assets has been much higher in Spain than in other large euro area countries, while in Germany it has been considerably lower for most of the time. The differences observed between countries in the share of housing wealth in total assets reflect a number of factors. These include differences in home ownership ratios, attitudes towards risk and credit, the role of government and non-residents in owning and letting housing, the composition of financial asset holdings, and house and stock price dynamics. In particular, the home ownership ratio is comparatively low in Germany.[75] Together with the differences in economic performance and income

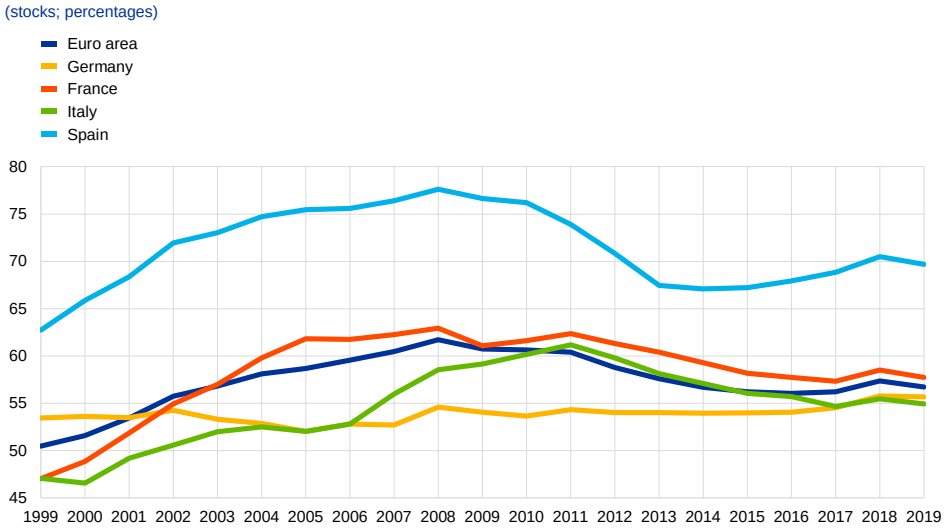
[74] A broadly similar picture emerges when comparing households' net worth in the largest euro area countries.

[75] For differences in home ownership across European countries, see "The Household Finance and Consumption Survey: results from the second wave", *Statistics Paper Series*, No 18, ECB, December 2016.

growth and possible measurement-related issues, these factors also largely explain the differences in household wealth levels and dynamics across countries.

Chart 5

Share of housing wealth in households' total assets in the largest euro area countries



Sources: Eurostat, Bank of Spain, ECB estimates and ECB calculations.
Notes: Households' total assets are defined as the sum of households' housing wealth and financial wealth. Housing wealth includes dwellings and land underlying dwellings. The latest observations are for the second quarter of 2019.

Euro area households' financial wealth consists mostly of liquid assets and pension and life insurance-related assets. Households' financial wealth accounted for some 43% of their total assets on aggregate in the euro area in mid-2019. However, as indirectly shown in Chart 5 above, this share was significantly higher in Germany than in the euro area for much of the period since 1999 and considerably lower in Spain. At the aggregate euro area level, since 1999 households' financial assets have mainly been in the form of currency and deposits and pension and life insurance products (see Chart 6). For both asset types, their share in households' total financial asset holdings stood close to 34% in mid-2019, remaining considerably higher than the levels prevailing before the global financial crisis erupted.[76] Currency and deposits are more liquid and less risky than most other financial instruments, whereas pension and life insurance products are often contractual savings. Listed and unlisted shares and other equity, investment fund shares and debt securities accounted for around 19%, 9% and 2%, respectively, of households' total financial asset holdings in mid-2019.[77] The shares of these riskier instruments in households' total financial assets still remain below their pre-crisis levels, albeit recovering gradually (with the exception of debt securities) from their lows at the end of 2011 amid significant increases in stock and bond prices in recent years. Box 1 discusses

[76] See "Euro area economic and financial developments by institutional sector: second quarter of 2019", ECB, October 2019.

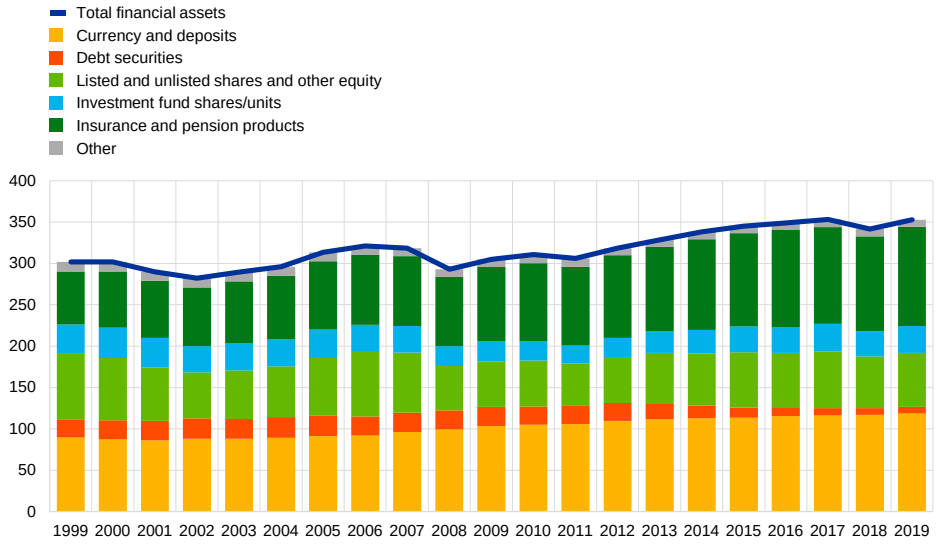
[77] Nearly 80% of households' direct holdings of shares and other equity consist of unlisted shares and other equity.

developments in households' securities holdings in the euro area and in the four largest euro area economies by issuing sector.[78]

Chart 6

Households' financial asset holdings in the euro area by instrument

(outstanding amounts; percentages of nominal gross disposable income)



Sources: Eurostat, ECB and ECB calculations.
Notes: "Other" includes loans granted by households to all institutional sectors and other accounts receivable. The latest observations are for the second quarter of 2019.

Box 1

Households' securities holdings in the euro area and the four largest euro area countries

Prepared by Janina Engel and Pierre Sola

Detailed statistics are collected and compiled by the Eurosystem regarding the most tradable assets held by households (as well as other institutional sectors), namely debt securities, listed shares and investment fund shares.[79]

In the five years from the first quarter of 2014 to the first quarter of 2019, households' total holdings of these securities increased slightly at euro area level, from €3,539 billion to €3,707 billion. This increase was mainly driven by German households' holdings, which grew by €246 billion. At the same time, holdings in Italy decreased by €223 billion, while movements in other euro area countries were more limited.

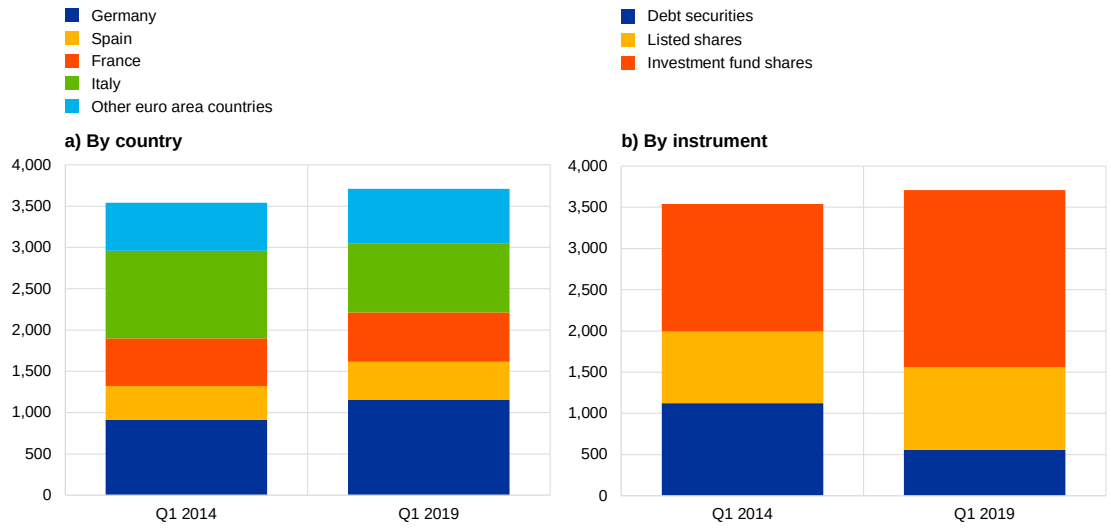
78 Data on euro area households' direct holdings of debt securities and listed shares and indirect holdings through investment funds and through insurance corporations and pension funds, broken down by issuing sector, are available on the ECB's website. See also the article entitled "The role of euro area non-monetary financial institutions in financial intermediation", *Economic Bulletin*, Issue 4, ECB, June 2016.

79 Who-to-whom tables are published on a quarterly basis in the euro area financial accounts, showing the issuing sectors of the securities held by each euro area investing sector, including households. National financial accounts shed further light on the issuing sectors in each country, including the extent to which investors have a "home bias", i.e. invest preferentially in securities issued by residents of their own country. In addition, Securities Holdings Statistics, which are also available on a quarterly basis, provide additional information on the country and sector of issuers of securities, including non-euro area entities. These data are available since the beginning of 2014 and can be found on the ECB's website in the Statistical Data Warehouse sections devoted to Sector Accounts and Securities Holdings Statistics, respectively.

Chart A

Households' securities holdings in the euro area by country and by instrument

(outstanding amounts, EUR billions)



Sources: ECB and national central banks.

For all instruments and most countries, the majority of the securities held were issued by residents of the same country, which may be regarded as evidence of a "home bias" (see Table A). In the largest euro area countries, for listed shares, this bias tends to be strongest in France and Spain, while being less pronounced in Italy. As regards debt securities, there is a marked preference for domestic debt securities in Italy, where 75% of the holdings are securities issued by Italian residents (down from 83% in the first quarter of 2014). Other large euro area countries also show a high proportion of domestic holdings, albeit to a lesser extent.

Table A

Proportion of outstanding amount of securities held by households and issued by residents of the same country in the first quarter of 2019

	Germany	France	Italy	Spain
Debt securities	66%	53%	75%	64%
Listed shares	64%	84%	54%	85%

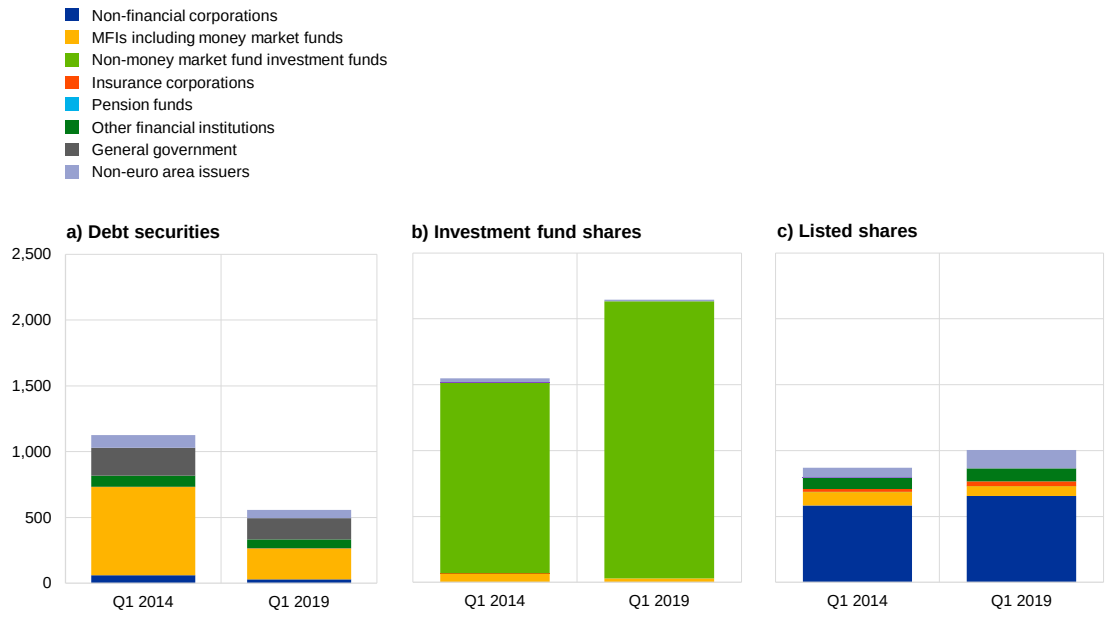
Sources: National central banks.

The value of debt securities held by euro area households dropped substantially between the first quarter of **2014** and the first quarter of **2019.** This largely reflects net sales by households (as opposed to price changes) in a period marked by large purchases of debt securities by the Eurosystem under the asset purchase programme (APP). The sales were driven mainly by Italian households, which decreased their holdings of debt securities significantly, although their holdings still remained much larger than those of households in other euro area countries. The most prominent issuers of these securities were monetary financial institutions (MFIs) and the Italian government. The overall decline in holdings of non-euro area debt securities mainly reflected a net €22 billion reduction in holdings of UK debt securities.

Chart B

Households' securities holdings in the euro area in the first quarter of 2014 and the first quarter of 2019 by issuing sector

(outstanding amounts, EUR billions)



Sources: ECB and national central banks.

In parallel to disinvesting in debt securities, euro area households purchased, on a net basis, investment fund shares amounting to €402 billion over five years. As the prices of these securities also increased significantly over this period, portfolios of investment fund shares held by households increased by €598 billion overall. The increase was mostly due to German, Spanish and Italian households, while there was a slight disinvestment by French households. Holdings of non-euro area investment fund shares remained very limited (only €12 billion in the first quarter of 2019).

The value of euro area households' holdings of listed shares increased between the first quarter of 2014 and the first quarter of 2019. However, this reflected a rise in prices over this period, excluding which there were net sales of listed shares. The price increases were led mainly by shares issued by non-financial corporations. Meanwhile, the value of holdings of shares issued by MFIs slightly decreased over the period, due both to falls in prices and to sales by euro area households. Holdings of listed shares issued by non-euro area residents nearly doubled over the period, owing to both net purchases and price increases. This increase was particularly noticeable for holdings of securities issued by US and Swiss residents, which together grew by more than €40 billion.

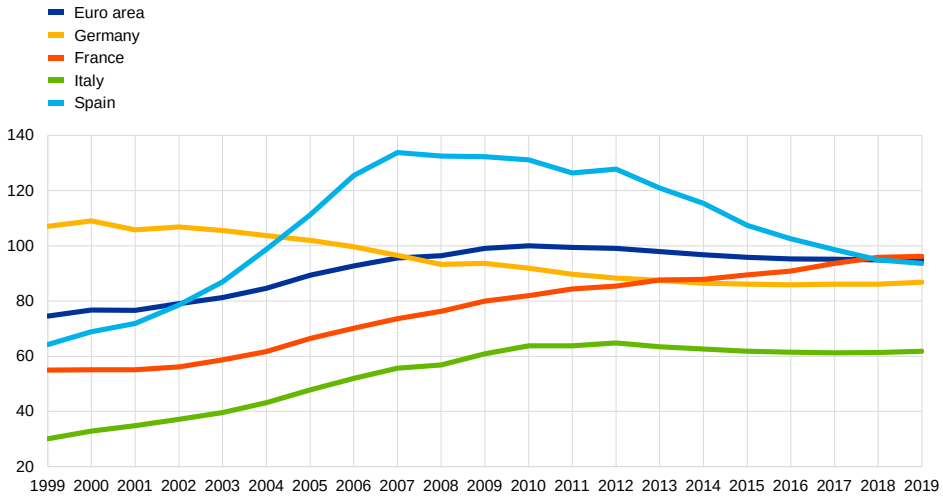
Aggregate euro area household debt figures also conceal a marked heterogeneity across countries in term of levels and dynamics. Chart 7 shows that household indebtedness increased strongly on aggregate in the euro area between 2002 and 2010 against the backdrop of the housing market and credit booms, with the increase being particularly large in Spain. Thereafter, the euro area household debt-to-income ratio moderated gradually, before stabilising in mid-2019 at close to its end-2007 levels. In Spain, household indebtedness has declined

significantly from its peak – benefiting from significant net loan redemptions and debt write-offs – to stand slightly below the aggregate euro area level. In France, the household debt-to-income ratio has continued to edge upwards in recent years on account of buoyant mortgage developments. In Germany, household indebtedness steadily declined until 2016, before increasing marginally as debt financing growth exceeded income growth. In Italy, the household debt-to-income ratio has remained stable at moderate levels in recent years.[80]

Chart 7

Household debt in the largest euro area countries

(stocks; percentages of nominal gross disposable income)



Sources: Eurostat, ECB and ECB calculations.
Notes: Debt is defined as total loans granted to households by all institutional sectors. The latest observations are for the second quarter of 2019.

Aggregate euro area household wealth figures also conceal heterogeneity across households. Although household-level data are not available at quarterly frequency, a snapshot of the distribution of wealth is available every three years from the Eurosystem's Household Finance and Consumption Survey (HFCS).[81] The latest survey results (for 2014) show that households' portfolio composition is quite heterogeneous. A key dimension of heterogeneity is the income distribution. As illustrated in Chart 8, business wealth and financial assets, such as stocks and mutual funds, constitute an important portfolio share for households in the upper part of the income distribution. By contrast, low and middle income households mainly hold their wealth in the form of housing and deposits. If differences in income go along with

[80] For the balance sheet structure of euro area households, see the box entitled "The structural dimension of the financing of non-financial corporations and households in the euro area", *Annual Report*, ECB, 2017.

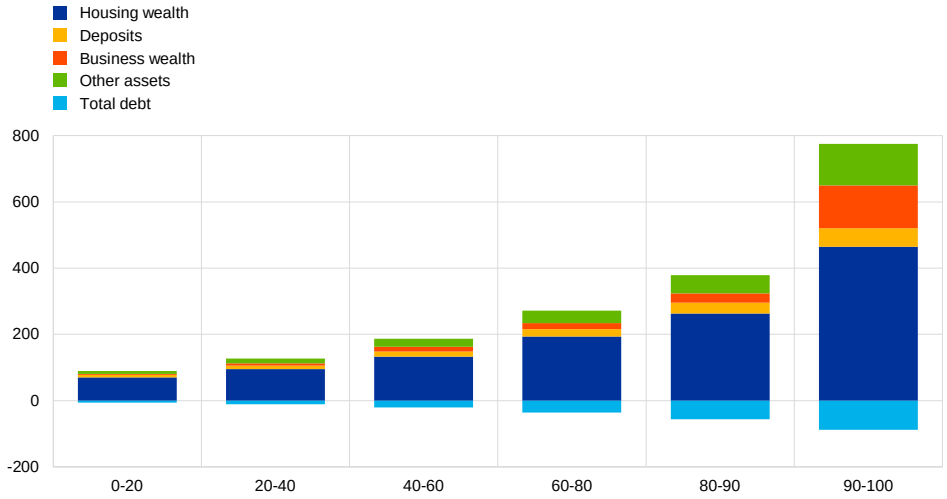
[81] The HFCS collects information on the assets, liabilities, income and consumption of households. See Household Finance and Consumption Network, "The Household Finance and Consumption Survey: results from the second wave", *Statistics Paper Series*, No 18, ECB, December 2016; and Domanski, D., Scatigna, M. and Zabai, A., "Wealth inequality and monetary policy", *BIS Quarterly Review*, March 2016.

differences in spending behaviour, the heterogeneity in portfolio composition could have implications for aggregate wealth effects on consumption.[82]

Chart 8

Household assets and debt by income quintile in the euro area

(x-axis: quintiles and deciles; y-axis: EUR thousands)



Source: The Household Finance and Consumption Survey, results from the second wave.
Notes: The chart shows the average value of assets and debt per household across five income quintiles. The top quintile is further broken down into two deciles. Housing wealth is composed of the households' main residence and other real estate. Other assets include the value of households' vehicles, voluntary pension/life insurance, shares, valuables, bonds, managed accounts and money owed to households.

3 Wealth effects on consumption

Wealth may have an impact on private consumption via various channels, which typically distinguish between financial and non-financial or housing wealth effects. A typical starting point is a life-cycle perspective in which consumer spending is determined by the lifetime resources available to consumers. Such resources are made up of human capital, typically captured by labour income, real capital, such as housing assets, and financial wealth, consisting of cash, bonds and equity. Household spending thus depends on both current and expected future cash flows. An increase in lifetime resources of consumers, including those related to wealth, should lead to higher consumption. Household (expected) cash flows also relate to (i) property income, (ii) collateral available for consumers to pledge, and (iii)

[82] See, for example, Campbell, J.Y. and Cocco, J.F., "How do house prices affect consumption? Evidence from micro data", *Journal of Monetary Economics*, Vol. 54(3), 2007, pp. 591-621; and Mian, A., Rao, K. and Sufi, A., "Household balance sheets, consumption, and the economic slump", *The Quarterly Journal of Economics*, Vol. 128(4), 2013, pp. 1687-1726.

confidence.[83] Interest and dividend income that households receive out of their wealth may be used for spending. Studies of collateral effects largely relate to housing, with a key role for mortgage equity withdrawal. The latter plays a rather limited role in the euro area compared to United Kingdom and the United States. Confidence may play a role, as consumers might feel more confident due to higher (valuations of) wealth and therefore save less and spend more. For example, a bullish stock market may make consumers feel more optimistic about the future of the economy and hence prompt them to increase their spending.

The impact of wealth on private consumption differs substantially across its components and depends crucially on some key features. A key difference between housing and financial wealth is the role of housing services in consumption. Higher house prices also increase the relative price of consuming housing services. Other key features include household preferences concerning wealth components and debt, the ease with which wealth components can be turned into liquid assets and whether valuation changes are perceived as permanent or temporary. For example, households might be less inclined to sell their owner-occupied houses in the presence of higher house prices than equities in the context of higher stock prices, partly due to higher transaction costs for houses than equities, but also due to their preferences. This also depends on the institutional setting. In countries with more sophisticated mortgage products (e.g. reverse mortgages or home equity loans), non-financial wealth can be made liquid more easily than some kinds of financial wealth, such as insurance products.

The direction of wealth effects at the macro level is, however, not always clear, because wealth components are typically not held equally by consumers. This applies in particular to housing wealth effects. As already mentioned at the start of Section 2, increases in house prices do not necessarily constitute an increase in wealth for the country as a whole. Similarly, it could be argued that fundamental changes in house prices, like other asset prices, represent only a redistribution of wealth between owners of housing and non-owners. Economy-wide there is no pure housing wealth effect from a change in house prices arising from a change in the fundamental value. There can, however, be a wealth effect related to house prices in periods when households are overly optimistic or pessimistic and the change in house

[83] For empirical evidence on (i), see de Bondt, G., Gieseck, A., Herrero, P. and Zekaite, Z., "Disaggregate income and wealth effects in the largest euro area countries", *Working Paper Series*, No 2343, ECB, December 2019; on (ii), see Ifo Institute for Economic Research, "Institutional Features of Mortgage Markets across Countries", *CESifo DICE Report*, Vol. 6(3), pp. 70-71, 2008; Haffner, M.E.A., Ong, R. and Wood, G.A., "Mortgage equity withdrawal and institutional settings: an exploratory analysis of six countries", *International Journal of Housing Policy*, Vol. 15(3), 2015, pp. 235-259; and Haurin, D. and Moulton, S., "International perspectives on homeownership and home equity extraction by senior households", *Journal of European Real Estate Research*, Vol. 10(3), 2017, pp. 245-276; and on (iii), see Karnizova. L. and Khan, H., "The stock market and the consumer confidence channel: evidence from Canada", *Empirical Economics*, Vol. 49(2), 2015, pp. 551-573, 2015. European empirical evidence is reported in Jansen, W.J. and Nahuis, N.J., "The stock market and consumer confidence: European evidence", *Economics Letters*, Vol. 79(1), 2003, pp. 89-98.

prices reflects a change in the speculative bubble component of house prices.[84] Higher house prices can, however, result in redistribution effects, if those long on housing (landlords) spend differently out of their wealth from those short on housing (tenants). In addition, higher house prices improve the scope for mortgage equity withdrawal. The latter may boost consumption in the short run, but will depress it in the long run, as the increased debt will have to be serviced. Box 2 reports wealth effects as found in the literature for the euro area and the largest euro area countries.

Box 2

Estimates of wealth effects for the euro area and the largest euro area countries

Prepared by Gabe de Bondt and Arne Gieseck

Wealth effects are often reported in terms of the marginal propensity to consume (MPC) out of wealth (measured in cent per euro of wealth). This is the proportion of an aggregate rise in wealth that gets spent on consumption. The MPC out of wealth might vary by wealth level, and in micro studies the MPC is typically lower at higher wealth. At the macro level, which is the focus of this article, the empirical literature reports a wide range of MPCs out of wealth. Table A provides an overview of empirical estimates for the euro area and the four largest euro area countries.

In the literature, long-term housing wealth effects in the euro area are consistently found to be weaker than those of financial wealth, with the latter significantly positive. The estimated long-term MPC out of housing wealth in the euro area, as reported in various studies, ranges between −1 and +2 cent per euro and is not always significantly different from zero (see the upper half of Table A). In contrast, the long-term MPC out of financial wealth is always found to be significantly positive, ranging between 1 and 7 cent per euro (see the lower half of Table A). The median and average long-term housing wealth effects are close to zero in the euro area, whereas the median and average reported MPCs out of financial wealth are 1 to 4 cent per euro. Notwithstanding the low estimates of MPC out of wealth, contributions from wealth to consumption growth can be considerable in periods of large swings in asset prices.

Aggregated euro area wealth effects mask striking heterogeneity among the four largest euro area countries, with consistently positive estimated long-term MPC out of housing wealth for Spain and out of financial wealth for France and Spain. There are wide ranges of empirical estimates of the long-term MPC out of housing wealth and financial wealth for the four largest euro area countries. For the former, it varies between −7 and +8 cent per euro (see the upper half of Table A) and, for the latter, between −3 and +15 cent per euro (see the lower half of Table A). Spain is the only large euro area country for which consistently positive housing wealth effects have been estimated. Similarly, for France and Spain, only positive long-term MPCs out of financial wealth have been reported. Focusing on the median outcomes, given the wide range of estimates, the MPC out of housing wealth has been comparatively strong in Spain, at 3 to 4 cent per euro, and relatively weak in Germany and Italy, at 1 cent per euro. Long-term financial wealth effects have similarly been found to be strong in Spain, with an MPC of 4 cent per euro, and weak in Germany, with an MPC of 1 cent per euro.

[84] For further reading on the argument of an economy-wide zero housing wealth effect, see White, W.R., "Measured wealth, real wealth and the illusion of saving", keynote speech at the Irving Fisher Committee Conference on "Measuring the financial position of the household sector", Basel, 30-31 August 2006; and for the distinction between a change in the fundamental or bubble value of house prices, see Buiter, W.H., "Housing Wealth Isn't Wealth", *Economics: The Open-Access, Open-Assessment E-Journal*, Vol. 4, No 2010-22, 2010. A similar distinction is relevant for stock prices, see reported empirical evidence in de Bondt, G., "Equity wealth effects: fundamental or bubble-driven?", *Applied Economics Letters*, Vol. 18(7-9), 2011, pp. 601-605.

Table A

Overview of estimated long-term MPC out of wealth in the euro area and the largest euro area countries in selected studies

(cent per euro)

	euro area		Germany		France		Italy		Spain	
Study	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Housing wealth										
Catte et al. (2004)							1	1	2	2
Bassanetti and Zollino (2008)							2	2		
Skudelny (2009)	1	1								
Slacalek (2009)	-1	2	3	3	2	2	-1	-1	6	6
Sousa (2009)	0	0								
Chauvin and Damette (2010)					1	4				
Kerdrain (2011)	0	2								
De Bonis and Silvestrini (2012)			-1	-1	-2	-2	0	0	0	0
Barrell et al. (2015)							0	1		
Winkler (2016)			4	4						
Guerrieri and Mendicino (2018)			-7	-4	3	3	6	7	4	8
de Bondt et al. (2019a)	0	0								
de Bondt et al. (2019b)	0	0	-1	1	0	0	0	0	0	0
Median	0	1	-1	1	1	2	0	1	2	2
Average	0	1	-1	1	1	2	1	1	3	3
Financial wealth										
Bertaut (2002)					3	3				
Byrne and Davis (2003)			2	2	3	3	1	2		
Catte et al. (2004)			2	2	2	2	1	1	2	2
Bassanetti and Zollino (2008)							4	6		
Skudelny (2009)	2	4								
Slacalek (2009)	1	4	14	14	3	3	10	10	5	5
Sousa (2009)	1	2								
Chauvin and Damette (2010)					4	12				
Kerdrain (2011)	5	7								
De Bonis and Silvestrini (2012)			0	0	3	3	-1	-1	3	3
Barrell et al. (2015)							2	3		
Guerrieri and Mendicino (2018)			-3	-3	4	4	6	6	10	15
de Bondt et al. (2019a)	1	1								
de Bondt et al. (2019b)	1	1	-1	1	1	2	0	1	2	5
Median	1	3	1	2	3	3	2	2	3	5
Average	2	3	2	3	3	4	3	4	4	6

Source: de Bondt, G., Gieseck, A., Herrero, P. and Zekaite, Z., "Disaggregate income and wealth effects in the largest euro area countries", *Working Paper Series,* No 2343, ECB, December 2019.

4 Conclusions

Observing household wealth developments and understanding their impact on economic activity is important for the conduct of monetary policy. The stock of household wealth is currently about seven times households' annual disposable income in the euro area. Movements in wealth are mainly driven by capital gains rather than net savings. Monetary policy may thus have an impact on wealth developments, notably via its impact on asset prices. Household wealth can both decline substantially (as in the aftermath of the global financial crisis) and increase significantly (as in the run-up to the global financial crisis and in recent years) and may thus at times contribute significantly to fluctuations in economic activity. It may also have an impact on the assessment of the appropriate monetary policy stance. Empirical analysis and estimates reported in this article suggest wide ranges for non-financial and financial wealth effects and substantial differences across euro area countries. In addition, wealth effects and the relative importance of non-financial wealth and financial wealth vary over time.

The broad nature of, and interplay between, channels through which household wealth may affect private consumption call for multiple perspectives in the assessment of the implications for the macroeconomy and monetary policy. Besides lifetime-related wealth effects, other channels relating to property income, collateral and confidence may play a role in relation to private consumption. In addition, the direction of wealth effects at the macro level is not always clear, because wealth components are typically not held equally by consumers. Some households benefit from rising house prices, whereas other are affected negatively. Given the rather limited role played by home equity withdrawal in the euro area, it is not surprising that long-term housing wealth effects in some euro area countries are estimated to be close to zero. More generally, wealth effects at the aggregated household sector level, which has been the focus of this article, might be different from those at the micro or household level. Finally, the creation of a capital markets union in the euro area would not only help firms to diversify their financing sources and improve their resilience to shocks emanating from the banking system but would also provide more investment opportunities for households and could facilitate the accumulation of wealth.

2 Assessing bank lending to corporates in the euro area since 2014

Prepared by Ramón Adalid, Matteo Falagiarda and Alberto Musso[85]

1 Introduction

Bank lending is the most important source of external finance for euro area firms and is therefore crucial for the transmission of monetary policy and, more generally, supporting economic growth. Despite the increasing relevance of non-bank financing over the last decade, bank lending remains a key element in the financing of euro area corporates. In particular, bank loans accounted for around 45% of total non-financial corporation (NFC) debt financing in 2018, down from around 60% in 2007.[86] During this period, credit markets were subject to multiple sources of stress, with the banking sector and its intermediation capacity being particularly affected. As a result, it has become even more essential from a central bank perspective to carry out careful analysis of bank lending.

This article provides an assessment of the recovery in lending to NFCs observed in the euro area since 2014.[87] It focuses on two main aspects of this assessment.

First, the article shows that, following the period of adjustment of bank balance sheets in 2008-13, improving bank credit supply conditions have supported the growth in corporates' business investment. More ample credit supply has thus complemented the stronger demand for credit, which in turn reflected improvements in the macroeconomic outlook, corporate balance sheets and corporate profitability. At the same time, the strength of the relationship between business investment and bank lending to corporates has differed across the major euro area countries, owing in part to the varying use of alternative sources of financing and different deleveraging needs.

Second, the article provides evidence that the recovery in NFC lending has been supported by the ECB's monetary policy measures. This evidence includes quantitative model-based estimates together with survey-based information. This analysis is complemented by a forward-looking assessment suggesting that the new series of targeted longer-term refinancing operations (TLTRO III) will help to preserve favourable bank lending conditions, ensure the smooth transmission of monetary policy and further support the accommodative stance of monetary policy.

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85 Data support provided by Filippo Claps and Franziska Fischer.

86 For more details on the factors underlying this trend, see "The structural dimension of the financing of non-financial corporations and households in the euro area", *Annual Report*, ECB, Frankfurt am Main, 2017.

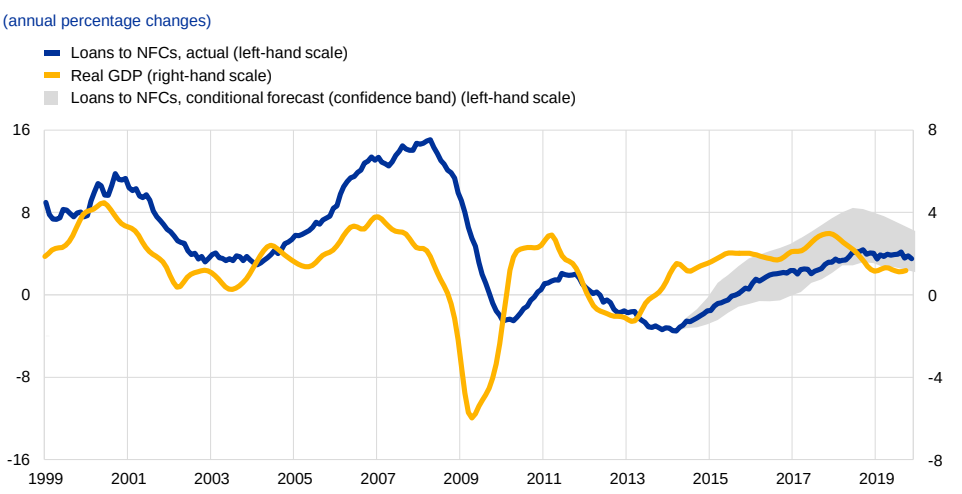
87 For an analysis of bank loan developments before 2014, see "Extensions to the models for assessing money and credit", *Monthly Bulletin*, ECB, Frankfurt am Main, February 2014, "Money and credit growth after economic and financial crises – a historical global perspective", *Monthly Bulletin*, ECB, Frankfurt am Main, February 2012 and "Recent developments in loans to the private sector", *Monthly Bulletin*, ECB, Frankfurt am Main, January 2011.

2 The recovery in bank lending to corporates

Bank lending to euro area corporates has gradually recovered since 2014, broadly in line with economic activity, although growth remains below pre-crisis levels. Annual growth in loans to NFCs, which had reached a trough in early 2014, returned to positive territory in 2015 and increased gradually thereafter, peaking at 4.3% in September 2018. It has stabilised at around 3.5-4% in recent quarters, reflecting the slowdown in real economic activity observed during 2018.[88] Overall, the recovery in bank lending to firms since 2014 has been rather moderate, with current growth rates remaining well below pre-crisis levels, despite very favourable financing conditions in particular since the ECB adopted non-standard monetary policy measures in 2014.[89] Evidence based on a Bayesian vector autoregression (VAR) model suggests that the pattern of the recovery since 2014 has been broadly in line with macroeconomic developments, given past business cycle regularities (Chart 1), although it tends to be at the lower end of the estimated confidence band. This assessment is based on a comparison between actual loan growth and what should have been expected taking the observed main macroeconomic variables in the recovery period as given and assuming that the relationship between bank lending and economic activity has not fundamentally changed over the past twenty years.

Chart 1

Bank loans to NFCs (actual and conditional forecast) and real GDP



Sources: ECB and ECB calculations.
Notes: Bank loans to NFCs are adjusted for sales, securitisation and cash pooling activities. The model used in the simulations is a Bayesian VAR model estimated in levels from the first quarter of 1995 to the first quarter of 2014 including six real and financial variables at quarterly frequency for the euro area: real GDP, the GDP deflator, bank loans to NFCs, the short-term interest rate, the ten-year sovereign bond yield and the lending rate to NFCs. The grey area includes the 16th and 84th percentiles of the forecast conditional on the actual developments in real GDP and the GDP deflator from the second quarter of 2014 to the second quarter of 2019. For more details on the modelling approach, see Giannone, D., Lenza, M. and Primiceri, G.E., "Prior Selection for Vector Autoregressions", *The Review of Economics and Statistics*, Vol. 97, Issue 2, May 2015, pp. 436-451 and Altavilla, C., Giannone, D. and Lenza, M., "The financial and macroeconomic effects of the OMT announcements", *International Journal of Central Banking*, Vol. 12, No 3, September 2016. Quarterly real GDP growth interpolated to monthly frequency using a cubic spline function. The latest observations are for November 2019 for loans and the third quarter of 2019 for real GDP.

88 NFC loan growth typically lags the business cycle by about three to four quarters. For more details on the cyclical properties of bank loans, see Darracq Pariès, M., Drahonsky, A-C., Falagiarda, M. and Musso, A., "Macroeconomic analysis of bank lending for monetary policy purposes", *Occasional Paper Series*, forthcoming, ECB, Frankfurt am Main.

89 As shown in Chart 12 in Section 5 of this issue of the Economic Bulletin ("Money and credit"), the cost of bank borrowing has declined significantly for NFCs since 2014, reaching record lows in recent quarters.

The overall moderate pace of the recovery in NFC bank lending since 2014 mainly reflects the post-crisis deleveraging process and the growing relevance of alternative sources of finance. While receiving strong support from the ECB's non-standard monetary policy measures (see Section 4 of this article), bank lending to corporates since 2014 has been restrained by at least three factors, with a number of demand factors playing a role. First, loan growth dynamics during the recovery have reflected the somewhat weaker economic activity compared with pre-crisis levels (Chart 1).[90] Second, the strong balance sheet adjustment process affecting borrowers in the post-crisis period (Chart 2) has weighed on the demand for bank loans in some countries more than others. Bank borrowing has mainly been weaker in sectors whose indebtedness increased the most during the pre-crisis boom, such as construction.[91] In a context of strong deleveraging needs, the ample availability of internal funding, as evidenced by the significant increase in retained earnings and liquid asset holdings recorded after the financial crisis, has also dampened the demand for bank loans in recent years.[92] Third, since the crisis firms have increasingly met their financing needs from alternative sources of external funding, mostly by issuing corporate bonds. Corporate bond issuance has become a more important source of funds for euro area firms (Chart 3), particularly for large corporates: initially (2009-10 and 2012-14) as a substitute for bank borrowing, reflecting a significant decline in the relative cost of market-based debt (Chart 4) and restrictions in bank credit supply, and subsequently as a complementary source of finance to bank loans, in particular after the ECB launched its corporate sector purchase programme (CSPP) in 2016.

A conclusive assessment of the factors behind the moderate pace of the recovery in bank lending to corporates requires a careful analysis of credit supply forces. For instance, given the endogeneity of both lending and economic activity, it would be possible to conclude that the latter has been constrained by the lack of bank financing. By the same token, resorting to other sources of finance could be the result of concerns about the ability to access bank loans, and would be indicative of supply-side constraints. The next section provides some evidence that helps to distinguish between these competing interpretations.

90 The average annual growth rate of real GDP was 2.3% between 1999 and 2007 and 1.9% between 2014 and 2019.

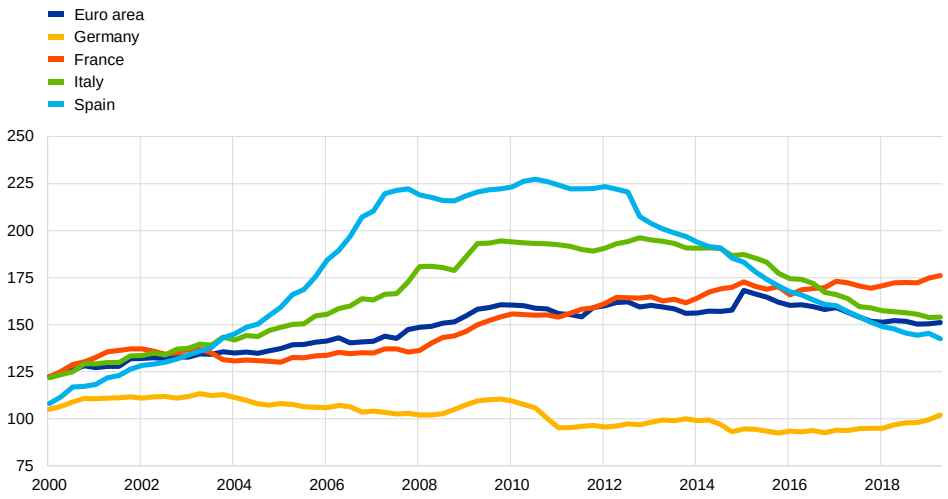
91 For more details on recent sectoral loan developments, see Darracq Pariès, M., Drahonsky, A-C., Falagiarda, M. and Musso, A., op. cit.

92 See also the Financial Stability Review, ECB, Frankfurt am Main, May 2019.

Chart 2

NFC consolidated gross debt in selected euro area countries

(as a share of NFC gross value added, %)

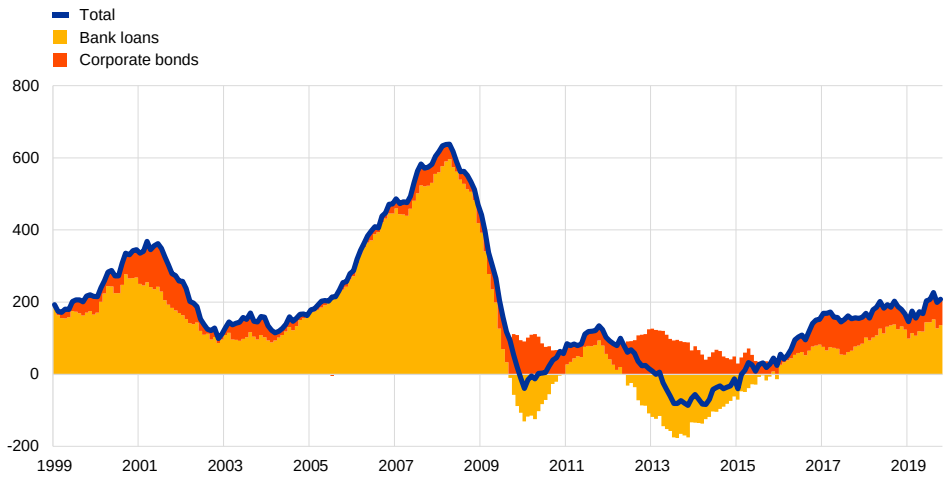


Sources: Eurostat, ECB and ECB calculations.
Note: The latest observation is for the second quarter of 2019.

Chart 3

Development of bank loans to NFCs and corporate bond issuance

(annual flows, EUR billions)

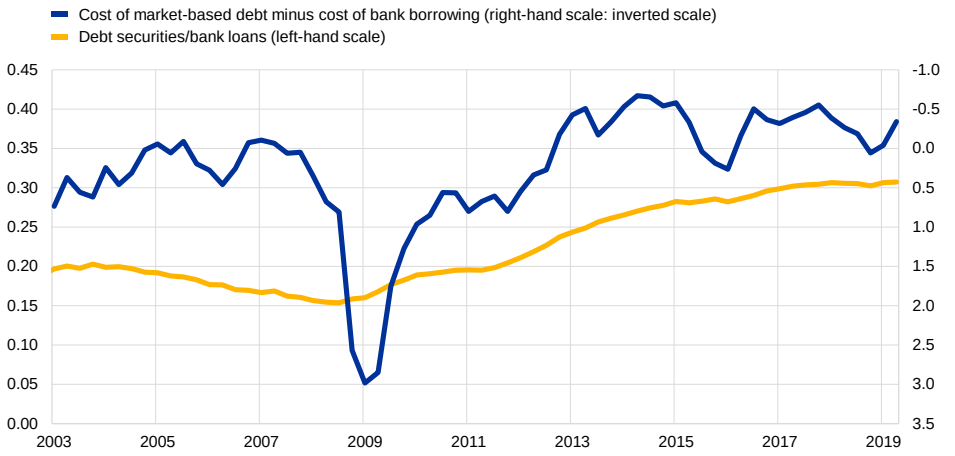


Source: ECB.
Note: The latest observation is for October 2019.

Chart 4

Ratio of debt securities issuance to bank loans and relative cost of market-based debt

(left-hand scale: ratio based on notional stocks; right-hand scale: percentage points)



Sources: Merrill Lynch, ECB and ECB calculations.
Note: The latest observation is for the second quarter of 2019.

3 Support for economic activity

Credit supply conditions have supported corporates' business investment. A range of models show that credit supply conditions (i.e. the availability of bank credit), which depressed business investment growth during the economic downturn, have been supporting business investment in the post-2014 recovery phase. According to these analyses, credit supply conditions have boosted business investment growth by about 1 percentage point on average over the recovery phase that started in 2014 (Chart 5). Replies to surveys by both lenders and borrowers support this view. According to the ECB's bank lending survey (BLS), which provides information on loan demand and the credit standards applied by banks, an unprecedentedly long period of easing credit conditions has been observed since the beginning of 2014.[93] The implementation of a number of non-standard monetary policy measures turns out to be a significant factor supporting easing of supply, as discussed in Section 4 of this article. A similar view can be drawn from the Survey on the Access to Finance of Enterprises (SAFE), which covers a very large sample of euro area firms. This shows that the availability of bank loans has improved considerably over the recovery phase.[94]

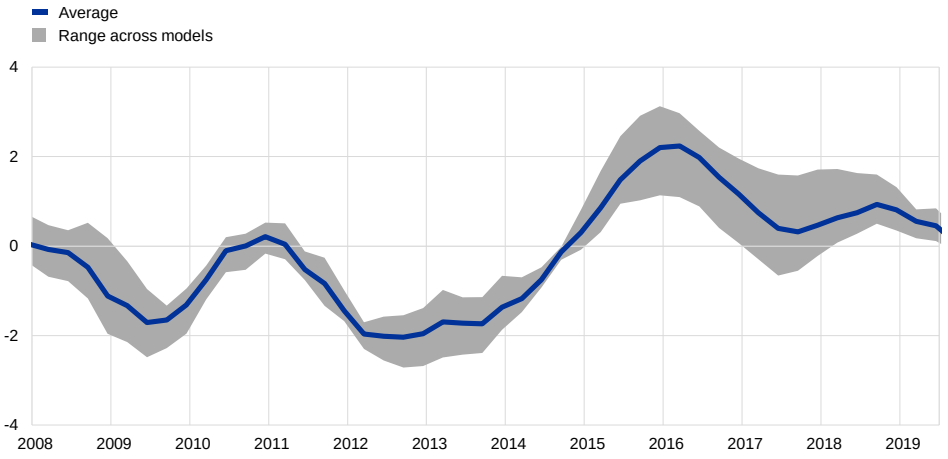
93 For more details, see Köhler-Ulbrich, P., Hempell, H.S. and Scopel, S., "The euro area bank lending survey", *Occasional Paper Series*, No 179, ECB, Frankfurt am Main, September 2016 and Burlon, L., Dimou, M., Drahonsky, A. and Köhler-Ulbrich, P., "What does the bank lending survey tell us about credit conditions for euro area firms?", *Economic Bulletin, Issue 8,* ECB, Frankfurt am Main, *2019.*

94 For more details, see Chart 15 in the "Survey on the Access to Finance of Enterprises in the euro area", ECB, Frankfurt am Main, November 2019.

Chart 5

Estimated impact of credit supply factors on business investment growth

(percentage point contributions to annual percentage changes)



Source: ECB calculations.
Notes: Estimated contributions of credit supply factors to annual growth rate of business investment based on a suite of models (time-varying parameter VAR with stochastic volatility with sign restriction identification: Gambetti, L. and Musso, A., "Loan supply shocks and the business cycle", *Journal of Applied Econometrics*, Vol. 32, Issue 4, June/July 2017; Bayesian VAR with sign restriction identification; proxy-SVAR: Altavilla, C., Darracq Pariès, M. and Nicoletti, G., "Loan supply, credit markets and the euro area financial crisis", *Journal of Banking & Finance*, Vol. 109, 2019). The latest observation is for the second quarter of 2019.

Longer-term loans, typically linked to fixed capital and financial investment, have driven the recovery in bank lending to corporates since 2014. Loans with longer maturities have accounted for most of the lending growth to NFCs during the recovery, proving more dynamic than short-term loans (Chart 6). This is in clear contrast to the pre-crisis boom, when short-term lending accounted for more than a quarter of total bank lending to NFCs. The shift towards longer maturities has been favoured by both the flattening and the downward shift of the yield curve, driven to a significant extent by the ECB's monetary policy, which has supported the demand for long-term fixed rate loans.[95] Long-term loans contribute to economic growth in two ways. First, they reduce firms' rollover and cash flow stress. Second, and more importantly, firms tend to have a preference for matching the maturity of their assets and liabilities, meaning that an abundance of long-term financing makes it easier for them to engage in long-term projects. In this respect, the solid growth in fixed investment seen in recent years is consistent with the increased relevance of long-term bank lending. Long-term lending has also favoured financial activities of a structural nature, such as M&A, the magnitude of which has contributed to the recent dynamism observed in syndicated loans.[96]

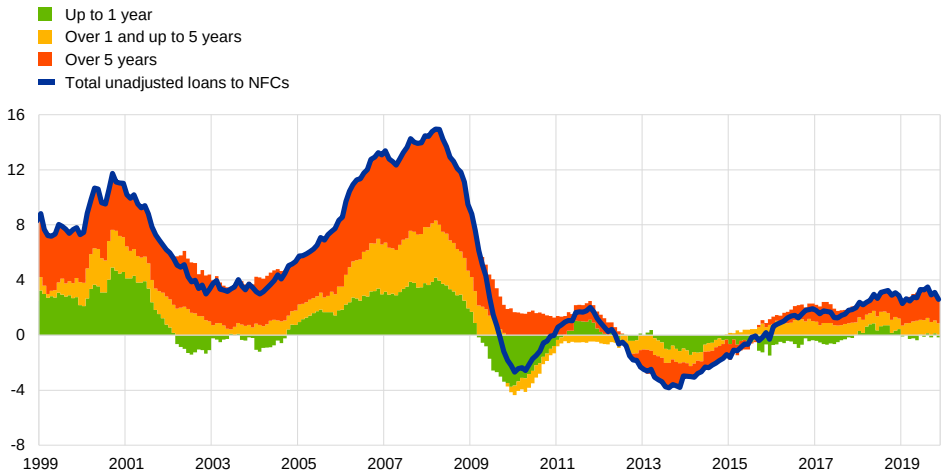
95 In particular, bank lending rates for short-term loans (fixation period of up to one year) declined by around 140 basis points between January 2014 and September 2019, while rates for long-term loans (fixation period of over one year) declined by around 180 basis points over the same period.

96 For more details on recent developments in syndicated lending, see Darracq Pariès, M., Drahonsky, A-C., Falagiarda, M. and Musso, A., op. cit.

Chart 6

Bank loans to NFCs by maturity

(annual percentage changes)



Sources: ECB and ECB calculations.
Notes: Breakdown by maturity based on unadjusted loans. The latest observation is for November 2019.

Survey evidence confirms the importance of business investment for the demand for bank loans. According to the BLS, the demand for bank loans to euro area enterprises since 2014 has been supported by the funding that corporates need for fixed investment.[97] Beyond this, M&A activity has also contributed to the growth in demand during the same period. The SAFE confirms that enterprises have mainly used the finance they have continued to obtain primarily from bank loans for fixed investment during the recovery.[98]

The strength of the relationship between business investment and bank lending to corporates has, however, differed across countries. Business investment has been growing at similar rates across the large euro area countries since 2014 (see panel (a) in Chart 7).[99] However, the growth in lending to NFCs has increasingly diverged in the large euro area economies as the recovery at the euro area level has matured, with Germany and France enjoying steadily increasing growth rates and Italy and Spain hovering around or below the zero line since 2016 (see panel (b) in Chart 7). Bank lending to corporates has developed in line with business investment in Germany and France[100] whereas a sizeable gap can be observed in Spain in particular and also Italy. In Germany and France, the recovery in bank lending to corporates has also been supported by dynamic real estate sectors and the need to finance M&A activities. In addition, in Germany, corporate indebtedness has remained particularly low, allowing firms to easily expand their recourse to external financing. In Italy and Spain, the gap between business investment and bank lending can be explained mainly by the severe deleveraging process undertaken by firms in recent

97 For more details, see Köhler-Ulbrich, P., Hempell, H.S. and Scopel, S., op. cit. and Burlon, L., Dimou, M., Drahonsky, A. and Köhler-Ulbrich, P., op. cit.

98 For more details, see Chart 13 in the "Survey on the Access to Finance of Enterprises in the euro area", ECB, Frankfurt am Main, November 2019.

99 Business investment refers to private non-residential investment.

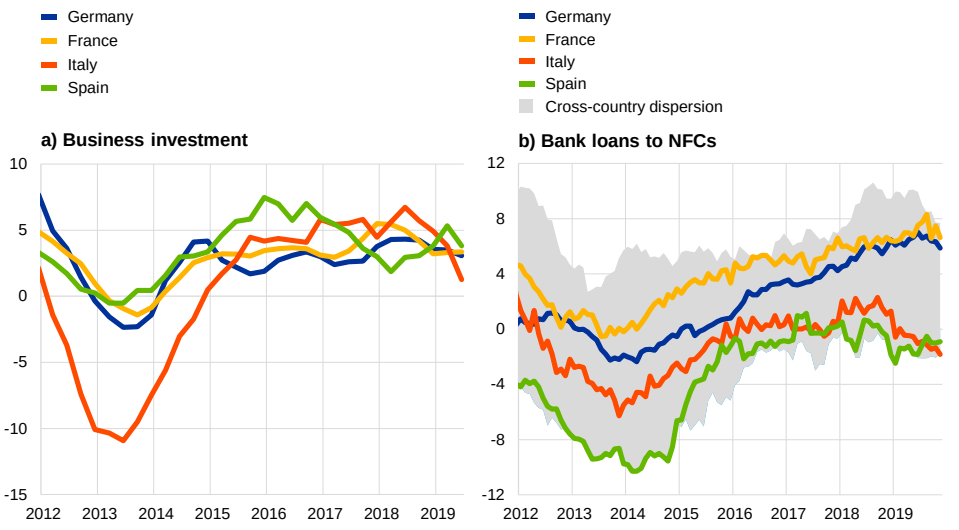
100 In Germany, the recovery in bank lending has been accompanied by an increasing contribution of lending to firms in other euro area countries.

years, which has been very pronounced for Spain, and by the use of alternative sources of finance. Indeed, there is a link between the accumulation of retained earnings (Chart 8), and hence the availability of internal funding, and the deleveraging imperative, which has continued to weigh on the demand for loans in both countries, especially from firms in the real estate and construction sectors. These sectors in particular have exercised a significant drag on total loan growth in Spain and Italy during the recovery phase.[101] In addition, the issuance of debt securities by firms has grown in both Italy and Spain since 2017, in clear contrast to previous recoveries (Chart 9). Moreover, the banking sector in both countries has gone through a process of significant balance sheet adjustment in recent years, which has constrained bank intermediation capacity during the process.[102] Despite gradual improvements since 2014, in Italy the stock of non-performing loans remains particularly high, which affects the capacity of banks to supply credit.

Chart 7

Business investment and bank loans to NFCs in selected euro area countries

(panel (a): annual percentage changes, four-quarter moving average; panel (b): annual percentage changes)



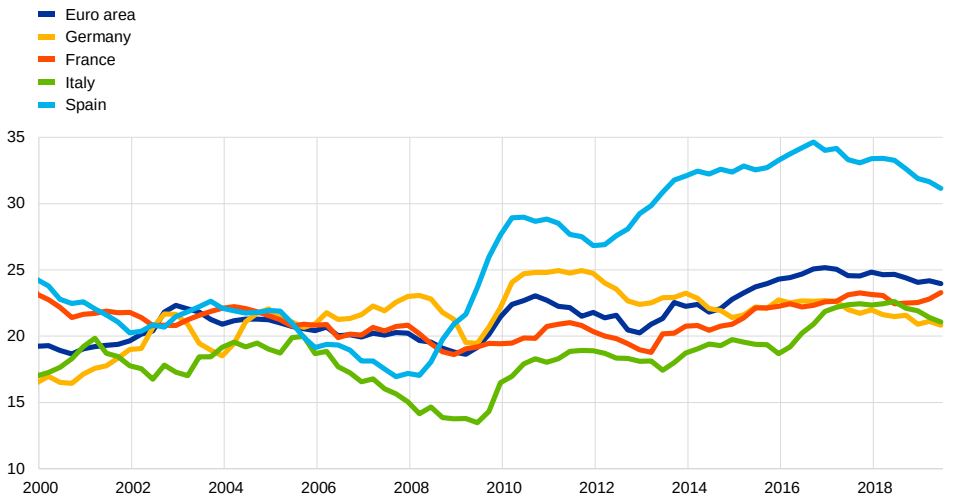
Sources: Eurostat, ECB and ECB calculations.
Notes: Business investment refers to private non-residential investment. Bank loans to NFCs are adjusted for sales, securitisation and cash pooling activities. The latest observations are for the second quarter of 2019 for business investment and November 2019 for loans.

101 For more details, see Darracq Pariès, M., Drahonsky, A-C., Falagiarda, M. and Musso, A., op. cit.

102 For more details on recent bank balance sheet developments, see Altavilla, C., Andreeva, D., Boucinha, M. and Holton, S., "Monetary policy, credit institutions and the bank lending channel in the euro area", *Occasional Paper Series*, No 222, ECB, Frankfurt am Main, May 2019.

Chart 8

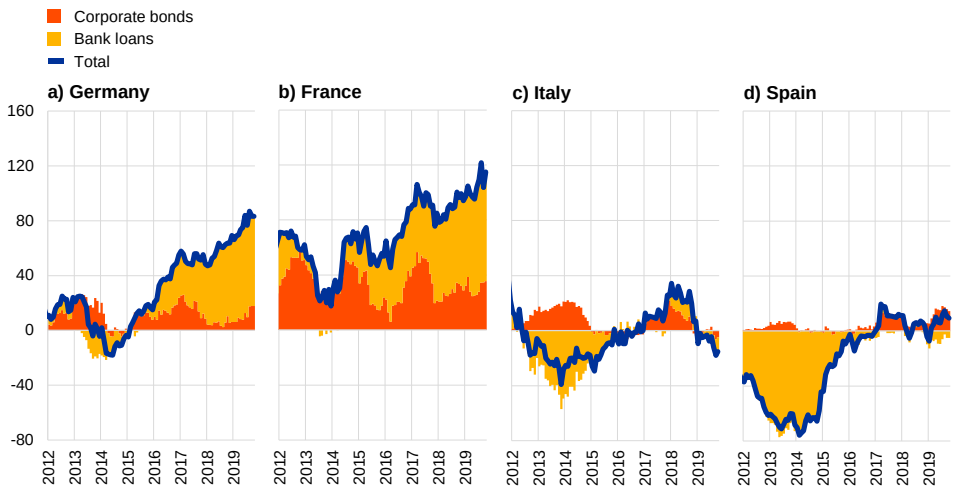
Retained earnings in selected euro area countries



Source: Eurostat.
Note: The latest observation is for the second quarter of 2019.

Chart 9

Development of bank loans to NFCs and corporate bond issuance in selected euro area countries



Source: ECB.
Note: The latest observation is for October 2019.

4 The impact of non-standard monetary policy measures

Credit markets have benefited from multiple and complementary monetary policy measures pursued by the ECB since 2014. The ECB has adopted a number of non-standard monetary policy measures since the summer of 2014. This includes launching targeted longer-term refinancing operations (TLTROs), lowering the deposit facility rate (DFR) into negative territory and expanding the asset purchase

programme (APP) to target a variety of investment-grade private and public sector securities. These policies have also been underpinned by forward guidance on the key ECB interest rates and, more recently, the reinvestment horizon for the APP portfolio and the resumption of the APP. The ECB's measures have stimulated the euro area economy via a number of transmission channels, leading to a significant upward impact on both real GDP and HICP inflation.[103] The transmission of these measures has operated in part through credit markets, including the direct pass-through channel and the bank lending channel.[104] Overall, these monetary policies have supported both the demand for, and the supply of, bank lending to corporates by improving the macroeconomic outlook and helping to mitigate banking sector constraints. This assessment is supported by analyses based on macroeconomic models, survey-based evidence and empirical studies based on micro data.

Model-based estimates at the macro level suggest that non-standard measures have significantly supported the recovery in bank lending to corporates.

Simulations based on alternative macroeconomic models suggest that, in the absence of the ECB's monetary policy measures, NFC loan growth would have recovered more slowly.[105] More specifically, while the growth of bank lending to corporates rose from about -1% in early 2015 to about 4% by the end of 2018, these model-based estimates suggest that, on average, annual loan growth would only have reached levels close to 2% by the end of 2018 if the ECB had not introduced its non-standard monetary policy measures (Chart 10). In other words, these measures are estimated to have induced about 2 percentage points of NFC loan growth between early 2015 and end-2018, affecting both demand and supply factors.

103 For an overview of the macroeconomic impact of the monetary policy measures adopted by the ECB since 2014, see Rostagno, M., Altavilla, C., Carboni, G., Lemke, W., Motto, R., Saint-Guilhem, A. and Yiangou, J., "A tale of two decades: the ECB's monetary policy at 20", *Working Paper Series*, No 2346, ECB, Frankfurt am Main, December 2019.

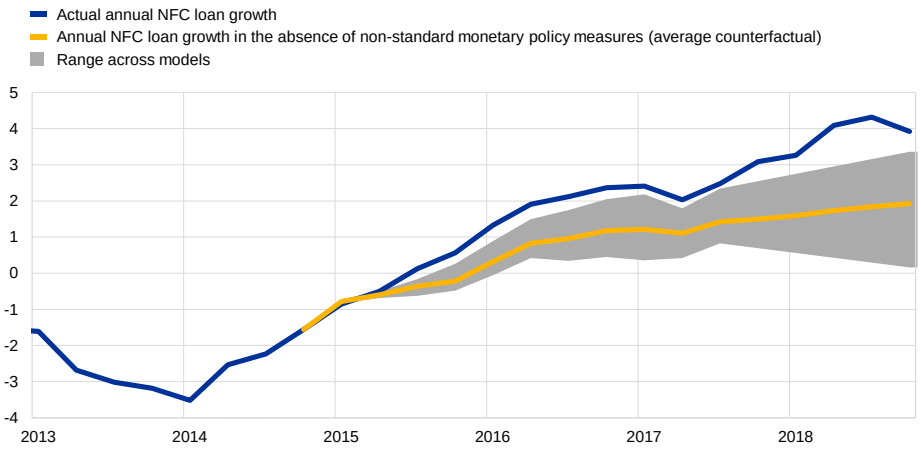
104 For a discussion of the main transmission channels for the ECB's credit easing package of 2014 and the APP starting in 2015, see "The transmission of the ECB's recent non-standard monetary policy measures", *Economic Bulletin*, Issue 7, ECB, Frankfurt am Main, 2015.

105 These simulations are based on a dynamic stochastic general equilibrium (DSGE) model for the euro area, a VAR with time-varying parameters and stochastic volatility (TV-VAR) for the euro area and a multi-country Bayesian VAR (BVAR) for euro area countries. DSGE simulations are based on Darracq Pariès, M. and Kühl, M., "The optimal conduct of central bank asset purchases", *Working Paper Series*, No 1973, ECB, Frankfurt am Main, November 2016. TV-VAR estimates are based on Gambetti, L. and Musso, A., "The macroeconomic impact of the ECB's expanded asset purchase programme (APP)", *Working Paper Series*, No 2075, ECB, Frankfurt am Main, June 2017. BVAR estimates are based on Altavilla, C., Giannone, D. and Lenza, M., "The financial and macroeconomic effects of the OMT announcements", *International Journal of Central Banking*, Vol. 12, No 3, September 2016. For more details on the models used, see Darracq Pariès, M., Drahonsky, A-C., Falagiarda, M. and Musso, A., op. cit.

Chart 10

Estimated impact of non-standard measures on NFC loan growth

(annual percentage changes)



Sources: ECB and ECB calculations.
Notes: These simulations are based on a DSGE model, a VAR with time-varying parameters and stochastic volatility and a multi-country Bayesian VAR. For more details on the models used, see Darracq Pariès, M., Drahonsky, A.C., Falagiarda, M. and Musso, A., op. cit. The latest observation is for the fourth quarter of 2018.

Survey-based evidence supports the view that the ECB's measures have had a tangible impact on bank lending conditions. Qualitative evidence on the relevance of the ECB's non-standard measures can be obtained from indicators derived from the BLS. A number of ad hoc questions included in the survey since 2015 have made it possible to compile a synthetic view of how banks perceive the effect of recent ECB non-standard measures, such as the TLTROs, a negative DFR and the APP, on their financial situation and lending decisions. The replies to these questions indicate that these measures have had a favourable impact on banks' liquidity and market financing conditions. Moreover, the survey responses suggest that the ECB's measures have had a substantial net easing impact on banks' terms and conditions, while the effects on their credit standards have been more limited.[106]

Studies based on granular banking and firm-level data suggest that the impact of the ECB's non-standard monetary policy measures on credit markets has operated via various channels. With regard to the TLTROs, some evidence suggests that, in combination with the other non-standard measures introduced since June 2014, the first two series of operations have proven effective in supporting the transmission of lower policy rates into improved borrowing conditions for corporates in the euro area. Moreover, these operations appear to have supported higher intermediation volumes in less vulnerable euro area countries and a slowdown of the contraction in bank lending in vulnerable countries.[107] Concerning the third series of such operations, Box 1 provides an overview of its modalities and the development of banks' funding conditions in the wake of its announcement.

106 For more details, see Burlon, L., Dimou, M., Drahonsky, A. and Köhler-Ulbrich, P., op. cit.

107 For more details, see "The targeted longer-term refinancing operations: an overview of the take-up and their impact on bank intermediation", *Economic Bulletin*, Issue 3, ECB, Frankfurt am Main, 2017. For the effects on lending rates, see "MFI lending rates: pass-through in the time of non-standard monetary policy", *Economic Bulletin*, Issue 1, ECB, Frankfurt am Main, 2017 and "Impact of the ECB's non-standard measures on financing conditions: taking stock of recent evidence", *Economic Bulletin*, Issue 2, ECB, Frankfurt am Main, 2017.

The introduction of a negative DFR in mid-2014 has provided an additional incentive for banks to lend to NFCs by increasing the opportunity cost of holding excess liquidity. As such, a negative DFR has provided an effective foil to the APP by increasing the cost of holding the reserves injected by the ECB's large-scale purchase programme. This has given banks an incentive to rebalance towards other assets, notably loans, thereby boosting credit supply.[108] Although this impact was broad-based, it was not evenly spread across banks, and some evidence suggests that it was stronger for universal banks and for banks with higher holdings of sovereign bond.

Box 1

The new series of quarterly targeted longer-term refinancing operations: impact on funding costs and transmission

Prepared by Francesca Barbiero and Lorenzo Burlon

The new series of quarterly targeted longer-term refinancing operations (TLTRO III) that started in September 2019 contains incentives for banks to maintain favourable lending conditions to the real economy. Similarly to TLTRO II, the new series features rewards, in the form of lower interest rates, for banks that extend eligible loans to firms and households.[109] The maximum rate is fixed at the level of the main refinancing operations (MRO) rate. By contrast, the rate applied to TLTRO III for counterparties whose eligible net lending between the end of March 2019 and the end of March 2021 exceeds their benchmark net lending will benefit from a reduction that can bring it to a level as low as the deposit facility rate (DFR) (currently -50 basis points).[110] Two main parameters define the incentive scheme: the width and position of the range of interest rates that are applied, and the amount by which lending needs to exceed the benchmark to attain the lowest possible rate (Chart A). In terms of the rates, a higher maximum rate would have made it unattractive to participate in the operation, leading to low uptake and an unwarranted broader tightening of bank funding conditions. At the same time, the minimum achievable rate had to be calibrated in such a way as to provide the desired accommodation and simultaneously avoid banks being completely discouraged from obtaining funding by issuing debt securities in private markets. Turning to the lending performance requirement, the lending threshold provides the target required to induce sufficient eligible bank lending, while its rather moderate level avoids triggering predatory behaviour by intermediaries that could result in large loan exposures and excessive risk-taking. These main parameters are flanked by additional features that also help to achieve the aims of TLTRO III. In particular, unwanted uses of the funds borrowed (i.e. acquiring assets rather than extending eligible loans) are further restrained by borrowing allowances that limit the scope for additional borrowing, given the amounts already

[108] For a more detailed analysis, see Altavilla, C., Andreeva, D., Boucinha, M. and Holton, S., op. cit., Altavilla, C., Boucinha, M., Holton, S. and Ongena, S., "Credit supply and demand in unconventional times", *Working Paper Series*, No 2202, ECB, Frankfurt am Main, November 2018 and Demiralp, S., Eisenschmidt, J. and Vlassopoulos, T., "Negative interest rates, excess liquidity and retail deposits: banks' reaction to unconventional monetary policy in the euro area", *Working Paper Series*, No 2283, ECB, Frankfurt am Main, May 2019.

[109] Eligible loans in the context of TLTRO III (as in the previous TLTROs) are loans to non-financial corporations and to households, excluding loans to households for house purchases.

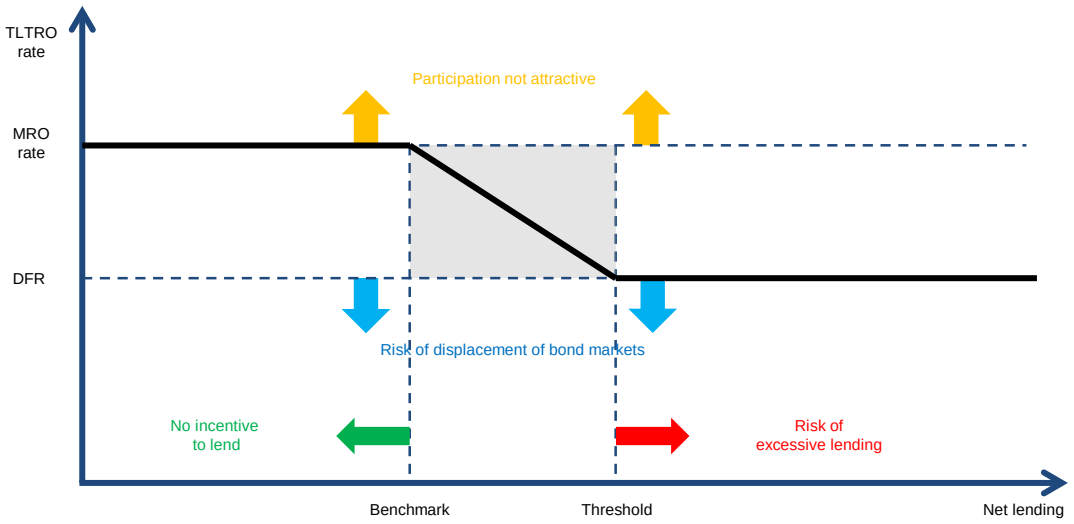
[110] Benchmark net lending is the amount of eligible net lending (gross lending in the form of eligible loans net of repayments of outstanding amounts of eligible loans) that a participant needs to exceed in the period from 1 April 2019 to 31 March 2021 in order to qualify for an interest rate on the participant's TLTRO III borrowing that is lower than the initial rate applied. It is equal to zero for banks that exhibited positive eligible net lending in the 12-month period to end-March 2019 and equal to the eligible net lending over the same period for banks that exhibited negative eligible net lending. This distinction removes potential disincentives to ongoing deleveraging efforts by participants. The maximum rate reduction is achieved when the benchmark net lending exceeds the threshold of 2.5% above the sum of the outstanding amounts of eligible loans as at 31 March 2019 and the benchmark net lending.

obtained under TLTRO II. Moreover, the indexation of TLTRO III pricing links it to that of alternative and comparable funding instruments, thus not discouraging banks from obtaining funding by issuing debt in private markets as TLTRO III unfold.

Chart A

Illustration of the TLTRO III incentive scheme

(percentages per annum)



Source: ECB.
Notes: The chart provides an illustration of the borrowing rate for TLTRO III. MRO and DFR refer to the average rates prevailing over the life of each operation. The grey area identifies the region in the parameter space that is compatible with the aim and limitations of the programme.

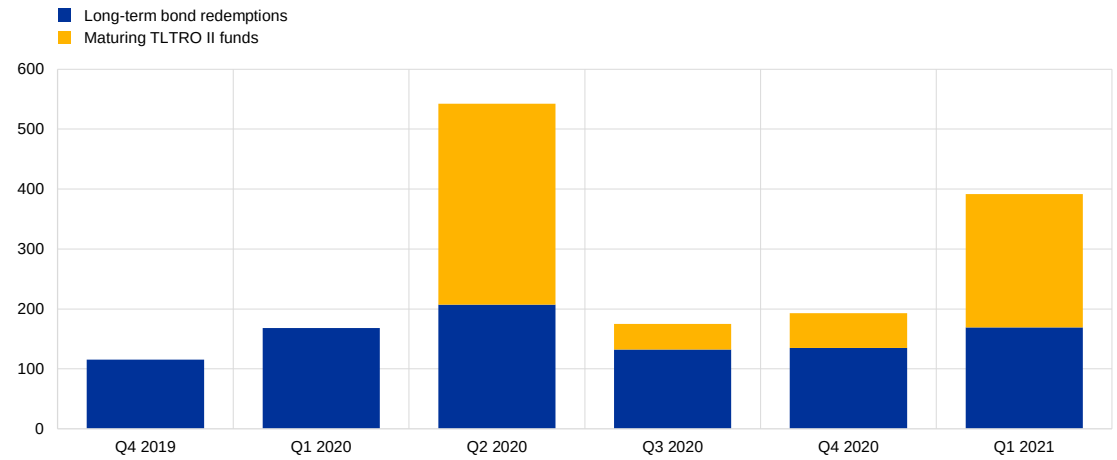
The announcement of TLTRO III in March 2019 reassured markets about the extension of a longer-term funding facility and alleviated the funding pressure on banks. The new operations helped to stave off "congestion effects" that would materialise in bank funding markets owing to the concurrent need to replace expiring TLTRO II funds and large volumes of maturing bonds (Chart B). Such congestion effects would have pushed up bank bond spreads, affecting funding costs not only for banks that had borrowed under TLTRO II but also for other banks. Indeed, according to the ECB's bank lending survey (BLS), banks have reported a net easing of market conditions since the new programme was announced, especially for debt securities funding.[111] Although this change partly reflected the reversal of the widening in credit spreads following the risk-aversion episode at the end of 2018, it also occurred despite the worsening of the macroeconomic outlook and the increase in uncertainty throughout 2019, circumstances that could have otherwise prompted a deterioration in banks' access to funding.

[111] See "The euro area bank lending survey – Third quarter of 2019", ECB, Frankfurt am Main, October 2019.

Chart B

TLTRO II and bond market refinancing needs of euro area banks

(EUR billions)



Sources: ECB and CSDB.
Notes: Long-term bond redemptions include bonds with an original maturity of more than a year, obtained from the CSDB statistics extracted as of October 2019. Hybrid bonds, certificates and Genussscheine are not considered in the calculation. Maturing TLTRO II funds refer to outstanding TLTRO II volumes (as of September 2019). TLTRO II.1, TLTRO II.2, TLTRO II.3 and TLTRO II.4 mature in June 2020, September 2020, December 2020 and March 2021 respectively.

In September 2019 the Governing Council decided to adjust the pricing and the maturity of TLTRO III against the background of a more protracted slowdown in the euro area economy than previously anticipated.[112] The new modalities adopted in September 2019 will preserve favourable bank lending conditions, ensure the smooth transmission of monetary policy and further support the accommodative stance of monetary policy.[113] The additional accommodation is expected to be transmitted via an overall compression of bank funding costs and a higher uptake of TLTRO III funds. Direct funding cost relief will be provided to banks that shift their funding choices away from more expensive bond funding options, while the overall decrease in the supply of securities induced by the lower funding needs of banks will exert further pressure on remaining market bond yields. As a consequence, the bank lending channel will lead to lower lending rates and higher credit volumes, as the experience of previous TLTROs shows.[114] Using a suite of models estimated on euro area data, the latest expectations of market participants for TLTRO III uptake as reported in surveys, which range between €300 billion and €560 billion, can be mapped to an overall funding cost relief of around 15 basis points. This in turn would be expected to lead to a peak reduction in lending rates of 15 basis points and a positive contribution to annual loan growth of almost 0.4 percentage points (Chart C).

[112] The pricing of TLTRO III was adjusted in September 2019 by removing the 10 basis points spread over the MRO and the DFR, while the maturity was extended from two years to three.

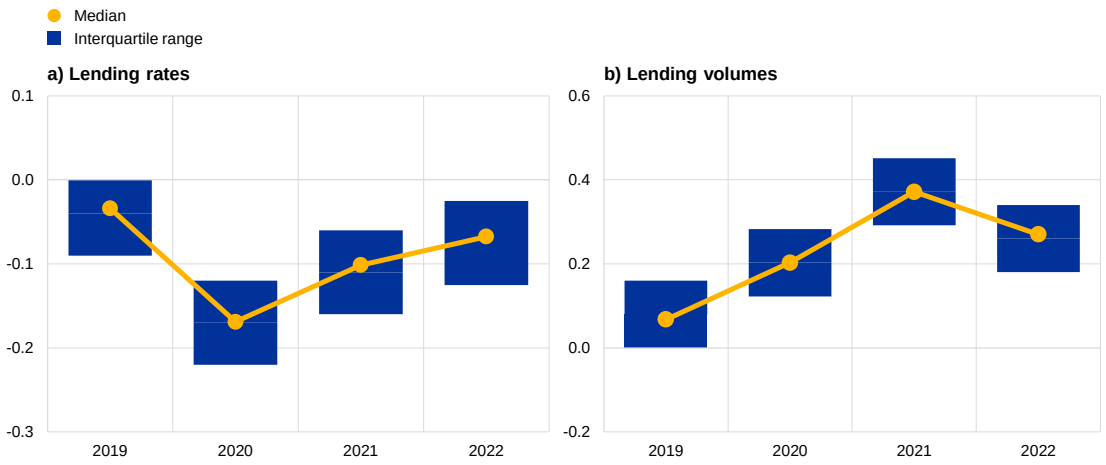
[113] See Schumacher, J. and Van Robays, I., "The September policy package", *Economic Bulletin*, Issue 6, ECB, Frankfurt am Main, 2019.

[114] See "The targeted longer-term refinancing operations: an overview of the take-up and their impact on bank intermediation", *Economic Bulletin*, Issue 3, ECB, Frankfurt am Main, 2017 and Altavilla, C., Andreeva, D., Boucinha, M. and Holton, S., op. cit.

Chart C

Impact of TLTRO III uptake on lending rates and volumes expected by market participants

(panel (a), percentage points per annum; panel (b), percentage point contribution to annual growth rate)



Sources: Bloomberg survey (October 2019), ECB and ECB calculations.
Notes: The assessment assumes a decrease in the marginal funding costs driven by partial substitution with lower issuance of bank bonds. The estimates are based on a range of models including those described in Altavilla, C., Canova, F. and Ciccarelli, M., "Mending the broken link: Heterogeneous bank lending rates and monetary policy pass-through", *Journal of Monetary Economics*, 2019; Holton, S. and Rodriguez D'Acri, C., "Interest rate pass-through since the euro area crisis", *Journal of Banking & Finance*, Vol. 96, Issue C, 2018, pp. 277-291; Benetton, M. and Fantino, D., "Competition and the pass-through of unconventional monetary policy: evidence from TLTROs", *Working Papers*, No 1187, Banca d'Italia, 2018; Albertazzi, U., Altavilla, C., Boucinha, M. and Di Maggio, M., "The incentive channel of monetary policy: quasi-experimental evidence from liquidity operations", mimeo, 2019. The TLTRO III uptake underlying the median is the median expectation by market participants according to the Bloomberg survey. Areas shaded dark blue denote the interquartile range of model-based outcomes for the median uptake expectation.

5 Concluding remarks

This article provides an assessment of the recovery in bank lending to euro area firms observed since 2014. Evidence reported in the article shows that loan growth has remained below pre-crisis levels during the recovery. While supported by highly favourable financing conditions, the moderate pace of the recovery has mainly reflected the post-crisis deleveraging process and the growing relevance of alternative sources of finance, as well as somewhat weaker economic activity compared with the pre-crisis period.

Improving credit supply conditions have supported the growth of credit and hence the expansion in firms' business investment. The positive effect of credit supply factors has reinforced the impact of a gradual normalisation in credit demand, which reflects improvements in the macroeconomic outlook and corporate balance sheets. The strength of the relationship between business investment and bank lending to corporates has, however, differed across countries. This heterogeneity is explained in part by the varying relevance of the use of alternative sources of finance across countries, the differing levels of deleveraging needs and country-specific macroeconomic developments.

Finally, ample evidence indicates that the recovery in bank lending to corporates would have been significantly weaker in the absence of the monetary policy measures pursued by the ECB since the summer of 2014. More specifically, model-based estimates at the macro level, survey-based evidence and studies based on granular banking and corporate data all suggest that the ECB's

non-standard measures have accounted for a significant portion of the recovery in bank lending to corporates. A forward-looking assessment suggests that TLTRO III will help to preserve favourable bank lending conditions, ensure the smooth transmission of monetary policy and further support the accommodative stance of monetary policy.

Statistics

Contents

Further information

ECB statistics can be accessed from the Statistical Data Warehouse (SDW):	http://sdw.ecb.europa.eu/
Data from the statistics section of the Economic Bulletin are available from the SDW:	http://sdw.ecb.europa.eu/reports.do?node=1000004813
A comprehensive Statistics Bulletin can be found in the SDW:	http://sdw.ecb.europa.eu/reports.do?node=1000004045
Methodological definitions can be found in the General Notes to the Statistics Bulletin:	http://sdw.ecb.europa.eu/reports.do?node=10000023
Details on calculations can be found in the Technical Notes to the Statistics Bulletin:	http://sdw.ecb.europa.eu/reports.do?node=10000022
Explanations of terms and abbreviations can be found in the ECB's statistics glossary:	http://www.ecb.europa.eu/home/glossary/html/glossa.en.html

Conventions used in the tables

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

1 External environment

1.1 Main trading partners, GDP and CPI

	GDP [1] (period-on-period percentage changes)						CPI (annual percentage changes)						
	G20	United States	United Kingdom	Japan	China	Memo item: euro area	OECD countries		United States	United Kingdom (HICP)	Japan	China	Memo item: euro area [2] (HICP)
							Total	excluding food and energy					
	1	2	3	4	5	6	7	8	9	10	11	12	13
2017	3.9	2.4	1.9	2.2	6.8	2.5	2.3	1.9	2.1	2.7	0.5	1.6	1.5
2018	3.7	2.9	1.3	0.3	6.6	1.9	2.6	2.1	2.4	2.5	1.0	2.1	1.8
2019	.	.	.	.	.	.	.	.	1.8	1.8	.	.	1.2
2018 Q4	0.7	0.3	0.2	0.3	1.5	0.3	2.8	2.3	2.2	2.3	0.8	2.2	1.9
2019 Q1	0.8	0.8	0.6	0.6	1.4	0.4	2.2	2.2	1.6	1.9	0.3	1.8	1.4
Q2	0.7	0.5	-0.2	0.5	1.6	0.2	2.3	2.2	1.8	2.0	0.8	2.6	1.4
Q3	0.7	0.5	0.4	0.4	1.5	0.3	1.9	2.2	1.8	1.8	0.3	2.9	1.0
2019 July	-	-	-	-	-	-	2.1	2.3	1.8	2.1	0.5	2.8	1.0
Aug.	-	-	-	-	-	-	1.9	2.3	1.7	1.7	0.3	2.8	1.0
Sep.	-	-	-	-	-	-	1.6	2.1	1.7	1.7	0.2	3.0	0.8
Oct.	-	-	-	-	-	-	1.6	2.0	1.8	1.5	0.2	3.8	0.7
Nov.	-	-	-	-	-	-	1.8	2.1	2.1	1.5	0.5	4.5	1.0
Dec.	-	-	-	-	-	-	.	.	2.3	1.3	.	.	1.3

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

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

	Purchasing Managers' Surveys (diffusion indices; s.a.)									Merchandise imports [1]		
	Composite Purchasing Managers' Index						Global Purchasing Managers' Index [2]					
	Global [2]	United States	United Kingdom	Japan	China	Memo item: euro area	Manufacturing	Services	New export orders	Global	Advanced economies	Emerging market economies
	1	2	3	4	5	6	7	8	9	10	11	12
2017	53.2	54.3	54.7	52.5	51.8	56.4	53.8	53.8	52.8	5.8	3.1	7.6
2018	53.4	55.0	53.3	52.1	52.3	54.6	53.1	53.8	50.9	4.4	3.1	5.2
2019	51.7	52.5	50.2	50.5	51.8	51.3	50.3	52.2	48.7	.	.	.
2019 Q1	52.8	54.8	50.6	50.6	51.5	51.5	50.9	53.4	49.6	-0.7	0.0	-1.1
Q2	51.5	51.8	50.5	50.8	51.6	51.8	50.4	51.8	49.4	-0.5	-1.3	0.0
Q3	51.4	51.4	50.1	51.3	51.4	51.2	50.4	51.7	48.4	0.9	1.6	0.4
Q4	51.4	51.9	49.5	49.2	52.6	50.7	51.3	51.4	49.5	.	.	.
2019 July	51.7	52.6	50.7	50.6	50.9	51.5	49.8	52.3	49.0	-0.7	0.3	-1.4
Aug.	51.1	50.7	50.2	51.9	51.6	51.9	50.4	51.4	47.7	-0.4	0.2	-0.7
Sep.	51.2	51.0	49.3	51.5	51.9	50.1	50.9	51.4	48.6	0.9	1.6	0.4
Oct.	50.8	50.9	50.0	49.1	52.0	50.6	51.0	50.7	49.5	1.0	0.4	1.3
Nov.	51.6	52.0	49.3	49.8	53.2	50.6	51.6	51.6	49.4	.	.	.
Dec.	51.8	52.7	49.3	48.6	52.6	50.9	51.2	52.0	49.6	.	.	.

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
	Euro short-term rate (€STR) [2]	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	8
2017	-	-0.35	-0.37	-0.33	-0.26	-0.15	1.26	-0.02
2018	-0.45	-0.36	-0.37	-0.32	-0.27	-0.17	2.31	-0.05
2019	-0.48	-0.39	-0.40	-0.36	-0.30	-0.22	2.33	-0.08
2019 June	-0.45	-0.36	-0.38	-0.33	-0.28	-0.19	2.40	-0.07
July	-0.45	-0.37	-0.40	-0.36	-0.35	-0.28	2.29	-0.07
Aug.	-0.45	-0.36	-0.41	-0.41	-0.40	-0.36	2.16	-0.10
Sep.	-0.49	-0.40	-0.45	-0.42	-0.39	-0.34	2.13	-0.09
Oct.	-0.55	-0.46	-0.46	-0.41	-0.36	-0.30	1.98	-0.11
Nov.	-0.54	-0.45	-0.45	-0.40	-0.34	-0.27	1.90	-0.10
Dec.	-0.54	-0.46	-0.45	-0.39	-0.34	-0.26	1.91	-0.06

Source: ECB.

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

2) The ECB published the euro short-term rate (€STR) for the first time on 2 October 2019, reflecting trading activity on 1 October 2019. Data on previous periods refer to the pre-€STR, which was published for information purposes only and not intended for use as a benchmark or reference rate in any market transactions.

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
2017	-0.78	-0.74	-0.64	-0.17	0.52	1.26	0.67	0.83	-0.66	-0.39	0.66	1.56
2018	-0.80	-0.75	-0.66	-0.26	0.32	1.07	0.08	0.51	-0.67	-0.45	0.44	1.17
2019	-0.68	-0.66	-0.62	-0.45	-0.14	0.52	0.34	0.24	-0.62	-0.52	-0.13	0.41
2019 June	-0.60	-0.69	-0.75	-0.64	-0.26	0.43	0.07	0.14	-0.78	-0.79	-0.29	0.44
July	-0.67	-0.74	-0.79	-0.72	-0.39	0.35	0.02	0.09	-0.82	-0.84	-0.45	0.25
Aug.	-0.84	-0.88	-0.93	-0.92	-0.65	0.23	-0.27	0.03	-0.94	-1.00	-0.73	-0.12
Sep.	-0.70	-0.76	-0.81	-0.77	-0.52	0.24	-0.10	0.03	-0.83	-0.86	-0.58	-0.02
Oct.	-0.67	-0.69	-0.69	-0.62	-0.36	0.32	0.17	-0.01	-0.70	-0.69	-0.41	0.14
Nov.	-0.61	-0.63	-0.65	-0.57	-0.30	0.34	0.18	0.04	-0.66	-0.65	-0.33	0.23
Dec.	-0.68	-0.66	-0.62	-0.45	-0.14	0.52	0.34	0.24	-0.62	-0.52	-0.13	0.41

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
2017	376.9	3,491.0	757.3	268.6	690.4	307.9	182.3	605.5	468.4	272.7	339.2	876.3	2,449.1	20,209.0
2018	375.5	3,386.6	766.3	264.9	697.3	336.0	173.1	629.5	502.5	278.8	292.9	800.5	2,746.2	22,310.7
2019	373.6	3,435.2	731.7	270.8	721.5	324.4	155.8	650.9	528.2	322.0	294.2	772.7	2,913.4	21,697.2
2019 June	369.7	3,406.0	722.6	264.9	728.5	323.2	152.0	652.3	517.5	323.9	296.6	734.0	2,890.2	21,060.2
July	380.0	3,507.8	739.6	271.8	752.7	329.3	155.8	666.2	548.2	326.4	292.2	769.2	2,996.1	21,593.7
Aug.	363.6	3,355.3	704.2	262.0	722.8	303.0	144.1	639.4	523.4	325.7	281.9	778.9	2,897.5	20,629.7
Sep.	379.7	3,514.5	738.2	271.3	751.1	319.7	151.8	669.4	545.0	338.5	294.7	804.3	2,982.2	21,585.5
Oct.	382.8	3,551.2	748.2	273.3	742.2	316.6	157.0	671.1	556.8	341.4	306.7	791.7	2,977.7	22,197.5
Nov.	398.4	3,693.1	794.5	283.0	761.3	328.8	163.6	711.6	585.2	339.4	304.8	837.7	3,104.9	23,278.1
Dec.	400.9	3,715.3	799.3	290.0	755.9	322.8	165.1	716.0	598.5	341.8	295.3	862.5	3,176.7	23,660.4

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
2018 Dec.	0.03	0.44	0.30	0.78	5.87	16.68	4.92	5.47	5.99	2.27	1.61	1.80	1.91	1.84	2.11	1.80
2019 Jan.	0.03	0.43	0.33	0.74	5.92	16.63	5.32	5.82	6.33	2.36	1.61	1.81	1.89	1.86	2.09	1.82
Feb.	0.03	0.43	0.32	0.70	5.97	16.61	5.28	5.71	6.27	2.41	1.59	1.84	1.87	1.84	2.09	1.80
Mar.	0.03	0.41	0.30	0.76	5.90	16.65	5.41	5.61	6.18	2.36	1.60	1.80	1.83	1.81	2.06	1.78
Apr.	0.03	0.41	0.32	0.75	5.88	16.66	5.56	5.63	6.19	2.36	1.60	1.77	1.77	1.77	2.02	1.75
May	0.03	0.44	0.31	0.79	5.81	16.67	5.61	5.76	6.34	2.33	1.58	1.79	1.73	1.74	1.99	1.72
June	0.03	0.44	0.32	0.82	5.81	16.63	5.42	5.67	6.25	2.31	1.56	1.73	1.67	1.65	1.95	1.67
July	0.03	0.43	0.31	0.80	5.75	16.58	5.74	5.74	6.31	2.34	1.56	1.71	1.59	1.57	1.90	1.61
Aug.	0.03	0.43	0.28	0.78	5.75	16.60	6.15	5.76	6.35	2.25	1.52	1.68	1.53	1.50	1.84	1.56
Sep.	0.03	0.43	0.27	0.78	5.82	16.61	5.65	5.62	6.17	2.22	1.47	1.63	1.49	1.43	1.77	1.48
Oct.	0.03	0.42	0.24	0.83	5.70	16.63	5.89	5.55	6.19	2.26	1.45	1.59	1.44	1.39	1.74	1.44
Nov. [(p)]	0.03	0.42	0.23	0.74	5.63	16.64	5.35	5.53	6.25	2.21	1.43	1.59	1.61	1.48	1.80	1.47

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
2018 Dec.	0.03	0.07	0.53	2.18	2.20	2.29	2.25	1.60	1.59	1.67	1.21	1.39	1.59	1.63
2019 Jan.	0.03	0.05	0.54	2.22	2.15	2.40	2.32	1.67	1.62	1.72	1.13	1.30	1.61	1.63
Feb.	0.03	0.03	0.52	2.21	2.15	2.41	2.33	1.65	1.64	1.69	1.13	1.39	1.56	1.64
Mar.	0.03	0.07	0.62	2.17	2.17	2.38	2.30	1.66	1.58	1.68	1.19	1.36	1.57	1.65
Apr.	0.03	0.06	0.54	2.19	2.19	2.36	2.26	1.67	1.60	1.64	1.16	1.33	1.44	1.62
May	0.03	0.04	0.46	2.15	2.18	2.38	2.29	1.66	1.59	1.63	1.09	1.17	1.50	1.57
June	0.03	0.03	0.56	2.17	2.13	2.33	2.25	1.63	1.55	1.56	1.09	1.28	1.39	1.55
July	0.03	0.04	0.57	2.11	2.07	2.50	2.20	1.66	1.57	1.54	1.16	1.32	1.39	1.56
Aug.	0.03	-0.04	0.54	2.08	2.07	2.36	2.19	1.64	1.59	1.53	1.06	1.32	1.40	1.52
Sep.	0.03	-0.05	0.88	2.16	2.03	2.25	2.15	1.61	1.51	1.44	1.10	1.26	1.29	1.54
Oct.	0.02	-0.03	0.44	2.08	2.01	2.41	2.11	1.61	1.54	1.40	1.14	1.40	1.27	1.56
Nov. [(p)]	0.02	-0.02	0.40	2.06	2.02	2.36	2.13	1.59	1.56	1.41	1.13	1.34	1.26	1.55

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														
2016	1,241	518	136	.	59	466	62	349	161	45	.	31	79	33
2017	1,240	519	155	.	70	438	57	367	167	54	.	37	79	31
2018	1,217	504	170	.	72	424	47	389	171	66	.	41	76	35
2019 June	1,316	556	177	.	99	428	56	383	151	81	.	45	71	35
July	1,346	576	180	.	110	424	57	469	204	88	.	56	76	45
Aug.	1,374	587	187	.	112	424	63	414	180	85	.	39	71	38
Sep.	1,396	597	189	.	106	439	66	413	156	88	.	48	81	41
Oct.	1,361	582	179	.	106	424	69	436	200	65	.	52	75	45
Nov.	1,344	570	180	.	102	426	66	375	159	68	.	44	75	30
Long-term														
2016	15,373	3,695	3,186	.	1,163	6,686	642	219	62	53	.	18	78	8
2017	15,353	3,560	3,060	.	1,223	6,866	643	247	66	73	.	18	83	7
2018	15,745	3,688	3,160	.	1,249	7,022	627	228	64	68	.	16	75	6
2019 June	16,112	3,768	3,228	.	1,294	7,190	633	244	61	75	.	22	80	5
July	16,181	3,789	3,268	.	1,304	7,184	636	263	70	82	.	25	78	8
Aug.	16,189	3,784	3,264	.	1,302	7,200	639	129	24	48	.	9	41	6
Sep.	16,260	3,805	3,292	.	1,329	7,200	634	283	82	90	.	34	74	4
Oct.	16,206	3,799	3,306	.	1,325	7,153	623	274	61	97	.	24	85	6
Nov.	16,344	3,833	3,374	.	1,338	7,172	628	273	67	103	.	26	71	6

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											
2016	16,613.8	4,213.4	3,321.3	.	1,222.6	7,151.7	704.9	7,089.5	537.6	1,084.2	5,467.7
2017	16,593.1	4,079.4	3,215.0	.	1,293.2	7,304.7	700.8	7,954.7	612.5	1,249.6	6,092.6
2018	16,961.8	4,192.1	3,330.1	.	1,320.4	7,445.8	673.4	7,027.2	465.1	1,099.4	5,462.7
2019 June	17,428.6	4,323.8	3,404.9	.	1,393.0	7,617.7	689.1	7,940.5	493.3	1,246.0	6,201.3
July	17,527.3	4,365.1	3,448.0	.	1,413.4	7,607.8	693.1	7,980.2	484.0	1,252.8	6,243.4
Aug.	17,563.8	4,371.5	3,451.2	.	1,414.5	7,624.6	702.0	7,841.0	462.4	1,183.0	6,195.6
Sep.	17,656.5	4,401.7	3,481.0	.	1,434.6	7,639.5	699.8	8,182.3	496.1	1,335.6	6,350.6
Oct.	17,566.4	4,380.7	3,485.1	.	1,430.4	7,577.4	692.8	8,257.7	508.2	1,348.6	6,400.8
Nov.	17,688.8	4,402.7	3,554.1	.	1,439.8	7,598.3	694.0	8,503.6	524.1	1,380.1	6,599.4
Growth rate											
2016	0.3	-3.0	-1.0	.	5.6	2.2	-0.1	0.5	1.2	0.9	0.4
2017	1.3	-0.5	0.1	.	6.0	2.2	0.4	1.0	6.1	2.8	0.2
2018	1.9	1.7	2.9	.	3.5	1.9	-4.3	0.7	-0.1	2.4	0.4
2019 June	2.9	4.5	2.2	.	4.5	2.3	1.0	0.0	-0.1	0.0	0.0
July	3.0	5.2	2.1	.	4.7	2.0	1.3	-0.1	-0.1	-0.1	-0.1
Aug.	3.3	4.9	2.9	.	5.7	2.2	1.6	-0.1	-0.1	-0.1	-0.1
Sep.	3.1	4.4	3.4	.	5.4	1.8	3.1	-0.1	-0.1	-0.2	-0.1
Oct.	2.9	4.1	3.8	.	5.5	1.5	1.3	-0.2	-0.1	-0.2	-0.2
Nov.	3.0	4.0	4.6	.	6.6	1.3	1.6	-0.1	-0.1	-0.1	-0.2

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	Real ULCT	Nominal	Real CPI
	1	2	3	4	5	6	7	8
2017	96.6	91.4	91.9	86.2	79.9	90.3	112.0	90.0
2018	98.9	93.4	93.4	87.5	80.3	91.3	117.9	93.8
2019	97.3	91.2	91.7	.	.	.	116.7	91.5
2019 Q1	97.4	91.7	92.1	86.0	79.2	89.2	116.7	92.1
Q2	97.3	91.4	91.7	85.9	78.6	88.9	116.8	91.8
Q3	97.7	91.4	91.8	86.2	79.7	89.1	116.9	91.5
Q4	97.0	90.4	91.3	.	.	.	116.2	90.5
2019 July	97.5	91.3	91.7	-	-	-	116.5	91.3
Aug.	98.1	91.9	92.1	-	-	-	117.6	92.0
Sep.	97.4	91.1	91.7	-	-	-	116.7	91.2
Oct.	97.4	90.9	91.7	-	-	-	116.6	91.0
Nov.	96.7	90.2	91.1	-	-	-	116.0	90.3
Dec.	96.7	90.2	91.1	-	-	-	116.0	90.3
Percentage change versus previous month								
2019 Dec.	0.0	0.0	0.0	-	-	-	0.0	0.0
Percentage change versus previous year								
2019 Dec.	-1.7	-2.8	-1.9	-	-	-	-1.7	-3.3

Source: ECB.

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

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
2017	7.629	7.464	26.326	7.439	309.193	126.711	4.257	0.877	4.5688	9.635	1.112	1.130
2018	7.808	7.418	25.647	7.453	318.890	130.396	4.261	0.885	4.6540	10.258	1.155	1.181
2019	7.735	7.418	25.670	7.466	325.297	122.006	4.298	0.878	4.7453	10.589	1.112	1.119
2019 Q1	7.663	7.422	25.683	7.464	317.907	125.083	4.302	0.873	4.7358	10.419	1.132	1.136
Q2	7.672	7.418	25.686	7.467	322.973	123.471	4.282	0.875	4.7480	10.619	1.126	1.124
Q3	7.800	7.394	25.734	7.463	328.099	119.323	4.318	0.902	4.7314	10.662	1.096	1.112
Q4	7.801	7.439	25.577	7.471	331.933	120.323	4.287	0.861	4.7666	10.652	1.096	1.107
2019 July	7.715	7.390	25.548	7.466	325.269	121.406	4.260	0.899	4.7286	10.560	1.108	1.122
Aug.	7.858	7.390	25.802	7.460	326.906	118.179	4.347	0.916	4.7280	10.736	1.089	1.113
Sep.	7.832	7.401	25.868	7.463	332.448	118.242	4.353	0.891	4.7381	10.697	1.090	1.100
Oct.	7.845	7.436	25.689	7.469	331.462	119.511	4.301	0.875	4.7538	10.802	1.098	1.105
Nov.	7.757	7.440	25.531	7.472	333.617	120.338	4.285	0.858	4.7698	10.650	1.098	1.105
Dec.	7.797	7.442	25.497	7.472	330.706	121.241	4.273	0.847	4.7779	10.483	1.093	1.111
Percentage change versus previous month												
2019 Dec.	0.5	0.0	-0.1	0.0	-0.9	0.8	-0.3	-1.2	0.2	-1.6	-0.5	0.6
Percentage change versus previous year												
2019 Dec.	-0.5	0.5	-1.3	0.1	2.5	-5.2	-0.4	-5.6	2.7	2.0	-3.3	-2.4

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)												
2018 Q4	25,405.3	25,871.5	-466.1	10,895.0	8,975.7	8,475.1	10,542.1	-87.9	5,404.0	6,353.6	719.1	14,209.5
2019 Q1	26,666.3	26,969.6	-303.3	11,184.9	9,113.4	9,126.6	11,318.5	-91.5	5,705.2	6,537.6	741.1	14,674.3
Q2	26,804.9	27,085.3	-280.4	11,037.1	9,054.3	9,226.8	11,461.7	-75.4	5,845.6	6,569.3	770.8	14,770.8
Q3	27,834.1	27,960.6	-126.5	11,405.6	9,344.7	9,612.9	11,906.0	-89.0	6,077.6	6,709.9	827.0	15,089.2
Outstanding amounts as a percentage of GDP												
2019 Q3	235.6	236.7	-1.1	96.6	79.1	81.4	100.8	-0.8	51.5	56.8	7.0	127.7
Transactions												
2018 Q4	-408.4	-471.6	63.1	-303.9	-195.0	-28.6	-158.9	29.6	-111.4	-117.6	5.8	-
2019 Q1	353.3	292.4	60.9	92.0	31.5	58.2	141.4	3.0	197.2	119.6	2.9	-
Q2	187.0	170.8	16.2	-90.3	12.8	51.2	78.7	34.1	189.3	79.4	2.7	-
Q3	442.2	337.4	104.8	162.5	150.6	146.7	153.0	3.2	128.1	33.8	1.7	-
2019 June	-75.1	-108.6	33.5	-123.9	-82.5	59.5	34.9	9.0	-17.5	-61.0	-2.3	-
July	351.5	320.1	31.4	135.3	138.7	52.5	69.4	11.1	145.5	112.1	7.1	-
Aug.	17.3	-21.8	39.1	-47.9	-63.0	37.2	17.2	-2.3	29.6	24.0	0.7	-
Sep.	73.4	39.1	34.3	75.1	75.0	57.0	66.4	-5.6	-46.9	-102.3	-6.2	-
Oct.	17.4	-44.2	61.5	-9.0	-76.5	44.0	6.8	3.6	-22.3	25.5	1.0	-
Nov.	21.4	-19.7	41.1	4.9	31.6	28.7	16.3	-2.0	-8.0	-67.7	-2.3	-
12-month cumulated transactions												
2019 Nov.	589.4	262.6	326.7	-83.7	-7.5	332.9	274.1	43.7	287.2	-4.0	9.2	-
12-month cumulated transactions as a percentage of GDP												
2019 Nov.	5.0	2.2	2.8	-0.7	-0.1	2.8	2.3	0.4	2.4	0.0	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)											
2016	10,817.0	10,339.5	5,858.7	2,235.3	2,193.0	1,038.2	675.1	473.5	52.5	477.5	4,928.9	4,451.4
2017	11,201.0	10,707.6	6,037.0	2,296.7	2,304.3	1,101.6	707.0	489.2	69.6	493.4	5,297.9	4,804.5
2018	11,561.2	11,060.9	6,207.5	2,363.9	2,405.9	1,175.2	742.2	481.7	83.6	500.3	5,547.4	5,047.0
2018 Q4	2,922.9	2,805.9	1,567.4	597.7	619.4	302.7	189.0	126.1	21.3	117.0	1,410.9	1,293.9
2019 Q1	2,945.4	2,815.3	1,574.6	601.9	626.7	311.0	190.5	123.5	12.0	130.1	1,421.6	1,291.5
Q2	2,966.3	2,865.1	1,589.0	608.5	657.6	309.9	191.4	154.6	10.0	101.2	1,426.6	1,325.4
Q3	2,982.7	2,849.3	1,597.5	612.3	639.4	316.3	191.7	129.5	0.2	133.4	1,435.7	1,302.3
	as a percentage of GDP											
2018	100.0	95.7	53.7	20.4	20.8	10.2	6.4	4.2	0.7	4.3	-	-
	Chain-linked volumes (prices for the previous year)											
	quarter-on-quarter percentage changes											
2018 Q4	0.3	0.4	0.4	0.4	1.6	1.3	0.4	4.3	-	-	0.9	1.1
2019 Q1	0.4	0.1	0.4	0.4	0.3	1.5	0.4	-2.7	-	-	0.9	0.2
Q2	0.2	1.4	0.2	0.5	5.2	-0.3	1.0	25.2	-	-	0.1	2.7
Q3	0.3	-0.6	0.5	0.4	-3.8	0.9	-0.8	-16.8	-	-	0.7	-1.2
	annual percentage changes											
2016	1.9	2.4	2.0	1.9	4.0	2.7	5.8	4.5	-	-	2.9	4.1
2017	2.5	2.2	1.7	1.3	3.5	3.6	4.0	2.4	-	-	5.5	5.0
2018	1.9	1.6	1.4	1.1	2.3	3.4	4.3	-2.8	-	-	3.3	2.7
2018 Q4	1.2	1.8	1.1	1.1	4.1	3.4	2.4	8.7	-	-	1.7	3.1
2019 Q1	1.4	1.5	1.1	1.4	4.1	4.8	3.2	3.5	-	-	3.1	3.6
Q2	1.2	2.5	1.2	1.5	8.3	3.1	3.1	29.4	-	-	2.2	5.3
Q3	1.2	1.3	1.5	1.8	3.2	3.5	1.0	5.8	-	-	2.7	2.9
	contributions to quarter-on-quarter percentage changes in GDP; percentage points											
2018 Q4	0.3	0.4	0.2	0.1	0.3	0.1	0.0	0.2	-0.2	0.0	-	-
2019 Q1	0.4	0.1	0.2	0.1	0.1	0.2	0.0	-0.1	-0.3	0.3	-	-
Q2	0.2	1.3	0.1	0.1	1.1	0.0	0.1	1.1	0.0	-1.1	-	-
Q3	0.3	-0.6	0.3	0.1	-0.8	0.1	-0.1	-0.9	-0.1	0.9	-	-
	contributions to annual percentage changes in GDP; percentage points											
2016	1.9	2.3	1.1	0.4	0.8	0.3	0.4	0.2	0.0	-0.4	-	-
2017	2.5	2.1	0.9	0.3	0.7	0.3	0.3	0.1	0.2	0.5	-	-
2018	1.9	1.5	0.7	0.2	0.5	0.3	0.3	-0.1	0.0	0.4	-	-
2018 Q4	1.2	1.7	0.6	0.2	0.8	0.3	0.2	0.4	0.0	-0.5	-	-
2019 Q1	1.4	1.5	0.6	0.3	0.8	0.5	0.2	0.1	-0.3	-0.1	-	-
Q2	1.2	2.4	0.6	0.3	1.7	0.3	0.2	1.2	-0.3	-1.2	-	-
Q3	1.2	1.2	0.8	0.4	0.7	0.4	0.1	0.2	-0.6	0.0	-	-

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)											
2016	9,703.7	161.1	1,931.6	479.2	1,834.9	444.3	473.7	1,106.3	1,084.7	1,847.2	340.6	1,113.3
2017	10,040.0	176.2	1,991.7	502.2	1,909.8	468.8	465.8	1,133.7	1,143.7	1,897.4	350.6	1,160.9
2018	10,356.3	177.7	2,041.5	537.2	1,968.4	488.5	469.8	1,168.0	1,195.2	1,954.7	355.3	1,205.0
2018 Q4	2,619.0	44.6	512.5	138.7	497.3	124.6	118.6	295.0	304.0	494.3	89.4	303.9
2019 Q1	2,639.0	45.0	514.6	142.5	502.3	125.8	117.9	297.9	305.6	497.4	90.1	306.4
Q2	2,658.5	45.2	513.4	144.1	506.0	127.9	118.9	300.2	309.0	502.6	91.2	308.8
Q3	2,669.0	44.9	512.0	146.2	509.1	128.4	119.5	302.0	310.7	504.9	91.2	312.8
	as a percentage of value added											
2018	100.0	1.7	19.7	5.2	19.0	4.7	4.5	11.3	11.5	18.9	3.4	-
	Chain-linked volumes (prices for the previous year)											
	quarter-on-quarter percentage changes											
2018 Q4	0.3	0.7	-0.4	1.3	0.5	0.5	-0.3	0.3	1.0	0.4	0.3	0.3
2019 Q1	0.5	0.0	0.0	1.5	1.0	1.5	0.6	0.5	-0.1	0.1	0.6	0.4
Q2	0.1	-1.0	-0.5	-0.1	0.1	1.2	0.9	0.3	0.3	0.3	0.3	0.5
Q3	0.2	0.1	-0.4	0.6	0.3	1.1	0.4	0.4	0.2	0.2	0.0	0.7
	annual percentage changes											
2016	1.8	-2.0	2.9	1.9	1.9	4.2	-1.0	0.6	2.6	1.6	0.0	2.7
2017	2.6	0.7	3.4	2.4	3.0	5.8	1.0	0.8	4.3	1.6	1.5	2.1
2018	2.0	1.2	1.8	3.4	2.2	4.4	1.1	1.6	3.3	1.0	0.4	1.5
2018 Q4	1.2	-0.4	-0.6	3.5	1.5	3.7	0.5	1.4	2.8	0.9	0.2	1.1
2019 Q1	1.4	-0.6	-0.4	4.8	2.0	4.9	1.2	1.4	1.7	1.0	0.9	1.1
Q2	1.2	-1.4	-1.1	3.4	1.6	5.1	1.8	1.5	1.5	1.1	1.4	1.3
Q3	1.1	-0.3	-1.3	3.2	1.9	4.4	1.6	1.5	1.4	1.1	1.2	2.0
	contributions to quarter-on-quarter percentage changes in value added; percentage points											
2018 Q4	0.3	0.0	-0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	-
2019 Q1	0.5	0.0	0.0	0.1	0.2	0.1	0.0	0.1	0.0	0.0	0.0	-
Q2	0.1	0.0	-0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	-
Q3	0.2	0.0	-0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	-
	contributions to annual percentage changes in value added; percentage points											
2016	1.8	0.0	0.6	0.1	0.4	0.2	-0.1	0.1	0.3	0.3	0.0	-
2017	2.6	0.0	0.7	0.1	0.6	0.3	0.1	0.1	0.5	0.3	0.1	-
2018	2.0	0.0	0.4	0.2	0.4	0.2	0.1	0.2	0.4	0.2	0.0	-
2018 Q4	1.2	0.0	-0.1	0.2	0.3	0.2	0.0	0.2	0.3	0.2	0.0	-
2019 Q1	1.4	0.0	-0.1	0.2	0.4	0.2	0.1	0.2	0.2	0.2	0.0	-
Q2	1.2	0.0	-0.2	0.2	0.3	0.2	0.1	0.2	0.2	0.2	0.0	-
Q3	1.1	0.0	-0.3	0.2	0.4	0.2	0.1	0.2	0.2	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													
2016	100.0	85.2	14.8	3.3	14.7	6.0	24.9	2.8	2.6	1.0	13.6	24.4	7.0
2017	100.0	85.6	14.4	3.2	14.6	6.0	24.9	2.8	2.5	1.0	13.8	24.3	6.9
2018	100.0	85.8	14.2	3.1	14.6	6.0	24.9	2.9	2.4	1.0	14.0	24.2	6.9
annual percentage changes													
2016	1.3	1.6	-0.2	-0.2	0.8	0.3	1.4	3.0	-0.5	2.1	2.9	1.3	0.7
2017	1.6	2.0	-0.7	-0.5	1.1	1.4	1.8	3.4	-1.5	1.8	3.7	1.1	1.0
2018	1.5	1.8	-0.2	-0.4	1.5	2.4	1.4	3.4	-0.7	1.7	2.8	1.3	0.6
2018 Q4	1.4	1.6	0.0	-0.4	1.3	3.0	1.3	3.8	-0.5	1.8	1.9	1.3	0.3
2019 Q1	1.4	1.6	0.1	0.1	1.3	2.5	1.2	4.1	-0.1	2.1	1.8	1.3	0.5
Q2	1.2	1.4	-0.4	-2.0	1.0	1.5	1.2	4.1	-0.4	1.0	1.3	1.4	0.9
Q3	1.0	1.3	-0.7	-1.2	0.8	1.0	0.9	3.5	0.0	0.1	1.3	1.3	1.1
Hours worked													
as a percentage of total hours worked													
2016	100.0	80.3	19.7	4.4	15.1	6.7	25.8	2.9	2.6	1.0	13.3	21.9	6.3
2017	100.0	80.7	19.3	4.3	15.1	6.7	25.8	3.0	2.5	1.0	13.6	21.8	6.2
2018	100.0	81.0	19.0	4.2	15.0	6.8	25.7	3.0	2.5	1.0	13.8	21.8	6.2
annual percentage changes													
2016	1.4	1.9	-0.3	0.0	0.9	0.5	1.6	3.0	-0.1	2.9	3.0	1.3	0.8
2017	1.2	1.7	-1.1	-1.1	0.8	1.3	1.3	3.3	-2.0	1.5	3.5	0.5	0.4
2018	1.5	1.9	-0.3	0.4	1.2	2.7	1.1	3.2	-1.0	2.4	2.8	1.3	0.5
2018 Q4	1.6	1.9	0.0	0.2	1.2	3.3	1.4	3.8	-0.1	2.0	2.2	1.4	0.5
2019 Q1	1.6	1.9	0.2	1.2	1.5	3.1	1.4	4.1	0.0	1.6	1.9	1.4	0.5
Q2	0.9	1.2	-0.6	-1.9	0.6	1.5	0.9	3.6	-0.3	1.1	1.4	1.0	0.1
Q3	0.7	1.2	-1.1	-1.3	0.5	0.8	0.5	3.4	0.0	1.9	1.1	1.0	0.3
Hours worked per person employed													
annual percentage changes													
2016	0.1	0.3	-0.2	0.3	0.1	0.2	0.2	0.0	0.4	0.7	0.1	0.0	0.0
2017	-0.4	-0.3	-0.4	-0.6	-0.3	-0.1	-0.5	-0.1	-0.5	-0.3	-0.2	-0.6	-0.5
2018	-0.1	0.1	-0.1	0.8	-0.2	0.3	-0.3	-0.3	-0.3	0.7	0.0	0.0	-0.1
2018 Q4	0.2	0.3	0.0	0.7	-0.1	0.3	0.1	0.1	0.3	0.2	0.3	0.2	0.2
2019 Q1	0.2	0.3	0.1	1.1	0.2	0.6	0.2	0.0	0.1	-0.4	0.1	0.1	0.0
Q2	-0.3	-0.2	-0.3	0.1	-0.4	0.0	-0.3	-0.5	0.1	0.2	0.1	-0.3	-0.8
Q3	-0.3	-0.2	-0.4	-0.2	-0.3	-0.2	-0.4	-0.1	-0.1	1.7	-0.1	-0.2	-0.8

Sources: Eurostat and ECB calculations.

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

3 Economic activity

3.4 Labour force, unemployment and job vacancies

(seasonally adjusted, unless otherwise indicated)

	Labour force, millions [1]	Under-employ-ment, % of labour force [1]	Unemployment												Job vacancy rate [2]
			Total		Long-term unemploy-ment, % of labour force [1]	By age				By gender					
						Adult		Youth		Male		Female			
			Millions	% of labour force		Millions	% of labour force	Millions	% of labour force	Millions	% of labour force	Millions	% of labour force	% of total posts
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
% of total in 2016			100.0			81.7		18.3		52.2		47.8		
2016	162.028	4.3	16.259	10.0	5.0	13.294	9.0	2.965	20.9	8.484	9.7	7.775	10.4	1.7
2017	162.659	4.1	14.760	9.1	4.4	12.093	8.1	2.666	18.8	7.636	8.7	7.124	9.5	1.9
2018	163.305	3.8	13.393	8.2	3.8	10.965	7.4	2.428	17.0	6.901	7.9	6.493	8.6	2.1
2018 Q4	163.707	3.7	12.957	7.9	3.6	10.591	7.1	2.366	16.4	6.646	7.6	6.312	8.3	2.3
2019 Q1	163.284	3.6	12.677	7.7	3.5	10.364	6.9	2.313	16.1	6.470	7.4	6.207	8.2	2.3
Q2	163.765	3.6	12.422	7.6	3.3	10.164	6.8	2.258	15.7	6.381	7.3	6.041	7.9	2.3
Q3	164.182	3.3	12.380	7.6	3.2	10.124	6.8	2.256	15.7	6.342	7.2	6.038	7.9	2.2
2019 June	-	-	12.365	7.5	-	10.124	6.8	2.241	15.6	6.350	7.2	6.015	7.9	-
July	-	-	12.418	7.6	-	10.150	6.8	2.268	15.8	6.356	7.2	6.061	8.0	-
Aug.	-	-	12.346	7.5	-	10.107	6.8	2.239	15.6	6.326	7.2	6.019	7.9	-
Sep.	-	-	12.376	7.6	-	10.115	6.8	2.261	15.7	6.343	7.2	6.033	7.9	-
Oct.	-	-	12.325	7.5	-	10.074	6.7	2.250	15.6	6.283	7.2	6.042	7.9	-
Nov.	-	-	12.315	7.5	-	10.057	6.7	2.258	15.6	6.291	7.2	6.024	7.9	-

Sources: Eurostat and ECB calculations.

1) Not seasonally adjusted.

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

3.5 Short-term business statistics

	Industrial production						Con-struction produc-tion	ECB indicator on industrial new orders	Retail sales				New passenger car regis-trations
	Total (excluding construction)	Main Industrial Groupings							Total	Food, beverages, tobacco	Non-food	Fuel	
		Manu-facturing	Inter-mediate goods	Capital goods	Consumer goods	Energy							
	1	2	3	4	5	6	7	8	9	10	11	12	13
% of total in 2015	100.0	88.7	32.1	34.5	21.8	11.6	100.0	100.0	100.0	40.4	52.5	7.1	100.0
annual percentage changes													
2017	2.9	3.2	3.4	3.9	1.4	1.2	3.1	7.9	2.5	1.6	3.5	0.8	5.7
2018	0.9	1.2	0.6	1.8	1.3	-1.5	2.0	2.7	1.6	1.3	1.9	0.6	0.9
2019	.	.	.	.	.	.	.	.	.	.	.	.	1.8
2019 Q1	-0.5	-0.2	-0.6	-0.6	1.3	-2.7	4.7	-3.2	2.4	1.0	3.5	2.7	-3.1
Q2	-1.4	-1.5	-2.5	-2.6	1.9	-0.1	2.4	-3.6	2.1	1.1	3.0	0.4	-0.7
Q3	-2.2	-2.2	-3.4	-2.4	0.3	-2.0	0.7	-4.8	2.7	0.9	4.2	1.1	0.6
Q4	.	.	.	.	.	.	.	.	.	.	.	.	12.5
2019 July	-2.2	-2.2	-2.9	-3.2	0.5	-1.3	1.6	-4.5	2.3	0.9	3.7	1.1	-3.8
Aug.	-2.8	-2.8	-3.3	-3.1	-1.1	-2.9	0.9	-5.6	2.8	1.2	4.2	1.8	-6.1
Sep.	-1.7	-1.7	-4.1	-1.3	1.4	-1.7	-0.3	-4.3	2.9	0.5	4.8	0.5	14.8
Oct.	-2.6	-2.7	-3.4	-5.2	3.0	-2.6	0.9	-4.5	1.7	0.4	2.6	0.6	9.8
Nov.	-1.5	-1.6	-2.8	-2.0	1.6	-1.9	1.4	.	2.2	1.7	3.1	-1.4	10.0
Dec.	.	.	.	.	.	.	.	.	.	.	.	.	17.9
month-on-month percentage changes (s.a.)													
2019 July	-0.4	-0.4	-0.3	2.2	-1.1	-0.2	-0.9	-1.7	-0.5	-0.5	-0.5	-0.1	-1.5
Aug.	0.6	0.5	0.1	1.0	0.4	0.2	-0.7	0.7	0.7	0.6	0.8	0.2	11.5
Sep.	0.0	0.1	-0.9	0.5	0.8	-0.8	1.2	0.3	-0.3	-0.8	0.0	-0.4	-17.4
Oct.	-0.9	-0.8	0.7	-2.5	0.8	-1.1	-0.5	0.0	-0.3	0.4	-0.7	0.4	4.6
Nov.	0.2	0.2	-0.5	1.2	-0.5	0.8	0.7	.	1.0	0.7	1.4	-1.0	4.3
Dec.	.	.	.	.	.	.	.	.	.	.	.	.	6.7

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
1999-15	99.2	-5.3	80.7	-11.7	-15.0	-8.7	7.2	-	51.2	52.5	53.0	52.8
2017	110.1	5.5	83.2	-5.4	-4.2	2.3	14.6	89.8	57.4	58.5	55.6	56.4
2018	111.2	6.6	83.8	-4.9	6.1	1.3	15.2	90.3	54.9	54.7	54.5	54.6
2019	103.5	-5.4	.	-7.1	5.4	-0.4	10.7	.	47.4	47.8	52.7	51.3
2019 Q1	106.0	-0.5	83.2	-7.0	7.5	-1.0	11.6	90.7	49.1	49.0	52.4	51.5
Q2	104.1	-4.3	82.4	-7.0	6.1	-0.7	11.6	90.5	47.7	48.5	53.1	51.8
Q3	102.5	-7.4	81.6	-6.7	4.1	0.0	9.8	90.3	46.4	47.0	52.8	51.2
Q4	101.2	-9.3	.	-7.6	4.1	-0.1	9.9	.	46.4	46.7	52.3	50.7
2019 July	102.7	-7.3	82.0	-6.6	5.0	-0.7	10.6	90.5	46.5	46.9	53.2	51.5
Aug.	103.1	-5.8	-	-7.1	3.9	0.6	9.2	-	47.0	47.9	53.5	51.9
Sep.	101.7	-8.9	-	-6.5	3.4	0.2	9.5	-	45.7	46.1	51.6	50.1
Oct.	100.8	-9.5	81.2	-7.6	4.4	-0.9	9.0	90.2	45.9	46.6	52.2	50.6
Nov.	101.2	-9.1	-	-7.2	2.8	-0.2	9.2	-	46.9	47.4	51.9	50.6
Dec.	101.5	-9.3	-	-8.1	5.0	0.8	11.4	-	46.3	46.1	52.8	50.9

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)	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) [1]		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
2016	12.3	94.0	2.0	2.0	5.5	3.6	3.1	35.1	7.4	79.7	4.2	5.5	2.5
2017	12.0	93.9	1.4	2.2	5.4	4.4	4.4	34.4	7.1	77.2	4.5	7.8	2.9
2018	12.3	93.7	1.8	2.1	7.1	2.5	4.6	33.8	6.0	76.6	2.4	5.4	1.7
2018 Q4	12.3	93.7	1.6	2.1	8.8	2.5	4.6	33.8	6.0	76.6	2.4	20.7	1.7
2019 Q1	12.6	93.4	2.0	2.2	7.6	3.8	4.4	33.7	6.1	76.7	2.3	7.7	1.7
Q2	12.8	93.6	2.1	2.3	4.4	4.3	4.3	33.5	5.8	77.3	1.7	16.6	1.5
Q3	13.0	93.6	2.3	2.4	4.9	5.3	4.3	33.3	5.8	78.0	1.8	0.1	1.4

Sources: ECB and Eurostat.
1) Based on four-quarter cumulated sums of saving, debt 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) Defined as consolidated loans and debt securities 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	Balance	Credit	Debit	Credit	Debit	Credit	Debit	Credit	Debit	Credit	Debit
	1	2	3	4	5	6	7	8	9	10	11	12	13
2018 Q4	1,058.3	977.2	81.1	599.0	526.7	234.6	210.4	195.2	166.6	29.4	73.4	22.0	64.4
2019 Q1	1,066.8	974.6	92.2	603.8	520.0	235.9	210.4	198.2	175.6	28.9	68.5	10.7	14.9
Q2	1,060.5	990.1	70.4	597.7	520.0	242.0	233.6	194.1	173.6	26.7	62.8	8.9	24.0
Q3	1,085.1	984.4	100.7	607.1	518.4	249.9	218.1	200.8	178.2	27.3	69.7	9.2	7.3
2019 June	353.2	333.3	19.9	199.4	173.3	81.0	78.7	64.1	58.9	8.7	22.4	3.5	8.2
July	362.3	334.0	28.3	202.1	172.7	82.7	76.9	68.4	61.1	9.1	23.2	3.6	2.6
Aug.	361.3	321.1	40.2	201.5	171.1	83.5	72.8	67.2	53.9	9.1	23.2	3.0	2.1
Sep.	361.5	329.4	32.2	203.5	174.5	83.6	68.4	65.2	63.2	9.2	23.3	2.6	2.6
Oct.	360.0	324.2	35.8	205.0	173.2	81.9	71.2	63.7	57.4	9.4	22.4	3.2	2.3
Nov.	353.1	319.1	33.9	200.2	173.9	81.1	70.6	63.5	56.2	8.4	18.3	2.9	2.4
12-month cumulated transactions													
2019 Nov.	4,273.3	3,915.9	357.4	2,413.0	2,079.3	968.7	874.8	781.5	694.8	110.1	267.0	49.5	74.6
12-month cumulated transactions as a percentage of GDP													
2019 Nov.	36.2	33.1	3.0	20.4	17.6	8.2	7.4	6.6	5.9	0.9	2.3	0.4	0.6

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)													
2018 Q4	4.0	8.3	579.5	278.4	123.0	168.3	484.9	538.6	310.6	89.4	130.9	382.2	66.2
2019 Q1	3.7	5.4	586.4	283.1	121.2	172.5	493.4	533.1	306.9	86.1	133.4	383.0	64.1
Q2	2.1	2.5	582.1	275.8	120.1	175.9	486.6	530.4	302.4	85.3	134.5	381.0	65.6
Q3	3.2	0.5	584.8	278.8	117.1	177.2	488.8	529.1	297.6	87.0	136.7	386.6	60.1
2019 June	-5.3	-4.2	193.8	91.9	39.8	58.7	163.2	176.1	99.1	28.2	45.2	128.3	21.3
July	6.0	2.7	193.6	92.8	39.0	58.4	161.9	176.7	100.9	29.0	44.7	128.7	20.3
Aug.	-2.1	-3.6	195.3	93.3	39.2	59.1	163.6	175.3	98.4	28.8	45.0	128.3	20.1
Sep.	5.3	2.2	195.8	92.7	39.0	59.7	163.3	177.2	98.2	29.2	47.0	129.5	19.7
Oct.	4.4	-2.7	200.2	92.8	43.5	60.7	168.0	176.2	97.4	29.9	46.4	129.2	19.2
Nov.	-2.9	-4.6	194.6	.	.	.	162.6	175.4	.	.	.	126.9	.
Volume indices (2000 = 100; annual percentage changes for columns 1 and 2)													
2018 Q4	0.2	2.2	107.6	110.2	109.8	103.7	107.6	110.0	109.1	112.7	110.9	111.8	98.2
2019 Q1	-0.3	1.7	108.0	111.6	107.5	105.0	108.1	110.1	110.3	108.7	112.3	111.6	105.2
Q2	-1.5	-0.2	106.4	108.3	105.9	105.5	106.2	109.0	107.6	108.7	113.2	111.3	97.3
Q3	1.0	1.4	106.8	109.6	102.8	105.9	106.2	109.4	108.2	110.2	112.7	111.6	96.6
2019 May	3.0	1.7	106.8	107.5	108.4	105.8	106.9	108.9	108.0	110.6	112.3	110.2	97.1
June	-7.9	-4.6	106.6	109.0	105.5	105.2	107.0	109.0	106.7	108.8	113.3	112.1	98.2
July	3.6	3.1	106.3	109.4	103.3	105.1	105.9	109.7	109.5	111.2	111.7	112.4	95.0
Aug.	-4.2	-2.6	106.9	110.0	102.6	105.9	106.5	109.1	108.3	109.4	111.0	111.0	99.1
Sep.	3.4	3.7	107.1	109.2	102.5	106.7	106.2	109.4	107.0	110.0	115.5	111.3	95.6
Oct.	2.3	-1.3	109.5	109.5	113.2	108.7	109.3	108.4	106.2	110.4	113.5	110.8	92.7

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)]						Administered prices	
	Index: 2015 = 100	Total		Goods	Services	Total	Processed food	Unprocessed food	Non-energy industrial goods	Energy (n.s.a.)	Services	Total HICP excluding administered prices	Administered prices
			Total excluding food and energy										
	1	2	3	4	5	6	7	8	9	10	11	12	13
% of total in 2019	100.0	100.0	70.9	55.5	44.5	100.0	14.5	4.5	26.4	10.1	44.5	86.7	13.3
2017	101.8	1.5	1.0	1.6	1.4	-	-	-	-	-	-	1.6	1.1
2018	103.6	1.8	1.0	2.0	1.5	-	-	-	-	-	-	1.7	1.9
2019	104.8	1.2	1.0	1.0	1.5	-	-	-	-	-	-	1.1	1.6
2019 Q1	103.5	1.4	1.0	1.5	1.4	0.0	0.6	0.1	0.1	-2.4	0.3	1.3	2.2
Q2	105.3	1.4	1.1	1.3	1.5	0.5	0.6	-0.2	0.1	1.6	0.6	1.3	2.1
Q3	105.1	1.0	0.9	0.7	1.3	0.2	0.5	1.3	0.1	-1.5	0.4	0.9	1.3
Q4	105.3	1.0	1.2	0.4	1.7	0.3	0.3	0.2	0.1	0.2	0.4	1.0	0.7
2019 July	104.9	1.0	0.9	0.9	1.2	0.0	0.2	0.5	0.1	-0.6	0.0	1.0	1.1
Aug.	105.1	1.0	0.9	0.8	1.3	0.1	0.1	0.7	0.0	-0.6	0.2	1.0	1.4
Sep.	105.3	0.8	1.0	0.3	1.5	0.0	0.0	-0.3	0.0	0.0	0.1	0.8	1.3
Oct.	105.4	0.7	1.1	0.1	1.5	0.1	0.1	-0.2	0.0	0.4	0.2	0.7	0.8
Nov.	105.1	1.0	1.3	0.3	1.9	0.1	0.2	0.5	0.1	0.0	0.1	1.0	0.7
Dec.	105.4	1.3	1.3	1.0	1.8	0.1	0.0	0.4	0.1	0.1	0.1	1.4	0.8

	Goods						Services					
	Food (including alcoholic beverages and tobacco)			Industrial goods			Housing		Transport	Communication	Recreation and personal care	Miscellaneous
	Total	Processed food	Unprocessed food	Total	Non-energy industrial goods	Energy		Rents				
	14	15	16	17	18	19	20	21	22	23	24	25
% of total in 2019	19.0	14.5	4.5	36.5	26.4	10.1	11.0	6.5	7.2	2.6	15.3	8.4
2017	1.8	1.5	2.4	1.5	0.3	4.9	1.3	1.2	2.1	-1.1	2.1	0.8
2018	2.2	2.1	2.3	1.9	0.3	6.4	1.2	1.2	1.5	-0.1	2.0	1.4
2019	1.8	1.9	1.4	0.5	0.3	1.1	1.4	1.3	2.0	-0.7	1.7	1.5
2019 Q1	2.0	1.9	1.9	1.3	0.3	3.9	1.2	1.2	1.3	-0.6	1.7	1.5
Q2	1.5	1.8	0.6	1.2	0.3	3.6	1.3	1.3	2.1	-1.2	2.0	1.5
Q3	1.8	1.9	1.6	0.0	0.3	-0.7	1.5	1.5	2.2	-0.8	1.1	1.5
Q4	1.8	1.9	1.6	-0.3	0.4	-2.1	1.5	1.5	2.4	-0.2	2.0	1.5
2019 July	1.9	2.0	1.7	0.4	0.4	0.5	1.5	1.5	2.1	-1.1	0.8	1.4
Aug.	2.1	1.9	2.5	0.1	0.3	-0.6	1.5	1.5	2.3	-0.8	0.9	1.7
Sep.	1.6	1.8	0.7	-0.3	0.2	-1.8	1.5	1.5	2.1	-0.6	1.5	1.6
Oct.	1.5	1.8	0.7	-0.7	0.3	-3.1	1.5	1.5	2.4	-0.4	1.5	1.6
Nov.	1.9	2.0	1.8	-0.6	0.4	-3.2	1.5	1.5	2.4	-0.1	2.4	1.5
Dec.	2.0	2.0	2.1	0.4	0.5	0.2	1.6	1.5	2.5	-0.1	2.1	1.5

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 [2]	Residential property prices [3]	Experimental indicator of commercial property prices [3]
	Total (index: 2015 = 100)	Total		Industry excluding construction and energy						Energy			
			Manu-facturing	Total	Intermediate goods	Capital goods	Consumer goods						
							Total	Food, beverages and tobacco	Non-food				
	1	2	3	4	5	6	7	8	9	10	11	12	13
% of total in 2015	100.0	100.0	77.3	72.1	28.9	20.7	22.5	16.5	5.9	27.9			
2016	97.9	-2.1	-1.4	-0.5	-1.6	0.5	0.0	0.0	0.0	-6.9	0.7	4.0	5.0
2017	100.8	3.0	3.0	2.1	3.2	0.9	1.9	2.9	0.2	5.6	2.0	4.3	4.8
2018	104.0	3.2	2.4	1.5	2.6	1.0	0.4	0.2	0.6	8.1	2.5	4.8	4.2
2018 Q4	105.7	4.0	2.3	1.4	2.5	1.1	0.3	-0.2	0.8	11.1	2.4	4.7	3.0
2019 Q1	105.4	3.0	1.3	1.1	1.3	1.5	0.4	-0.1	1.0	7.7	2.5	4.1	4.4
Q2	104.8	1.6	1.0	0.9	0.7	1.5	1.0	0.9	0.9	3.0	2.1	4.1	6.5
Q3	104.2	-0.6	0.0	0.5	-0.4	1.5	1.0	1.2	0.8	-4.3	1.2	3.8	.
2019 June	104.4	0.7	0.3	0.8	0.2	1.5	1.2	1.2	0.9	-0.2	-	-	-
July	104.5	0.1	0.4	0.6	-0.3	1.6	1.0	1.1	0.8	-2.0	-	-	-
Aug.	104.0	-0.8	-0.2	0.5	-0.4	1.5	1.0	1.3	0.8	-4.9	-	-	-
Sep.	104.2	-1.1	-0.3	0.4	-0.7	1.5	1.2	1.4	0.8	-6.1	-	-	-
Oct.	104.2	-1.9	-0.7	0.3	-1.0	1.4	1.5	1.8	0.8	-7.7	-	-	-
Nov.	104.4	-1.4	-0.3	0.3	-1.4	1.4	1.7	2.2	0.8	-6.1	-	-	-

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

1) Domestic sales only.

2) Input prices for residential buildings.

3) 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: 2015 = 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
2017	101.8	1.0	1.3	1.3	1.4	1.6	1.9	2.8	48.1	5.8	-3.5	16.6	6.7	-1.6	17.8
2018	103.1	1.3	1.7	1.4	1.8	2.0	1.4	2.3	60.4	-0.7	-5.8	4.3	-0.1	-5.3	5.7
2019	.	.	.	.	.	.	.	.	57.2	1.7	3.8	-0.1	2.6	7.5	-2.3
2019 Q1	104.1	1.5	1.7	1.2	1.7	2.6	1.2	1.5	55.6	3.1	3.4	2.8	3.9	5.1	2.7
Q2	104.7	1.7	1.6	1.5	1.7	2.1	1.0	0.9	61.0	-1.8	-0.7	-2.8	-0.1	4.7	-4.9
Q3	105.0	1.7	1.2	1.1	1.5	2.0	0.1	-1.1	55.7	1.8	3.7	0.2	1.7	6.5	-3.1
Q4	.	.	.	.	.	.	.	.	56.5	3.9	9.1	-0.6	5.2	13.8	-3.6
2019 July	-	-	-	-	-	-	-	-	57.1	2.7	3.7	1.8	2.9	7.4	-1.6
Aug.	-	-	-	-	-	-	-	-	53.3	-1.2	0.5	-2.7	-1.3	3.1	-5.7
Sep.	-	-	-	-	-	-	-	-	56.6	4.1	6.9	1.7	3.5	9.0	-2.0
Oct.	-	-	-	-	-	-	-	-	53.7	1.1	5.1	-2.4	1.9	9.4	-5.4
Nov.	-	-	-	-	-	-	-	-	56.8	4.1	10.6	-1.6	6.7	17.5	-4.2
Dec.	-	-	-	-	-	-	-	-	59.3	6.6	11.5	2.2	6.9	14.6	-1.1

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
1999-15	4.2	-	-	-3.6	32.0	56.7	56.3	-	49.7
2017	9.2	5.1	6.9	2.5	12.7	64.6	56.3	55.1	51.6
2018	11.5	7.4	9.4	12.1	20.3	65.4	57.9	56.1	52.7
2019	4.1	7.2	8.9	6.8	18.2	48.8	57.1	50.4	52.4
2019 Q1	8.9	8.2	10.4	11.4	20.4	53.9	57.7	53.0	53.1
Q2	4.6	7.2	9.1	6.1	19.7	50.6	57.1	51.2	52.3
Q3	1.7	6.6	8.3	4.5	17.9	46.4	56.5	48.9	52.0
Q4	1.2	6.9	7.8	5.3	14.7	44.2	56.9	48.6	52.0
2019 July	1.4	6.8	8.5	4.0	18.7	46.3	56.7	48.8	52.3
Aug.	2.3	6.1	8.8	4.4	18.1	46.7	56.8	49.4	52.1
Sep.	1.4	7.0	7.6	5.0	17.0	46.3	55.9	48.6	51.7
Oct.	1.1	6.5	7.9	4.8	16.0	43.7	57.3	48.7	52.1
Nov.	0.7	6.4	7.2	5.4	14.0	43.9	56.8	48.3	52.1
Dec.	1.9	7.7	8.4	5.6	14.1	45.0	56.7	48.9	51.8

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

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

	Total (index: 2016 = 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 2018	100.0	100.0	75.3	24.7	69.0	31.0	
2016	100.0	1.3	1.5	1.0	1.2	1.6	1.4
2017	101.8	1.8	1.7	1.9	1.8	1.7	1.5
2018	104.2	2.3	2.3	2.6	2.5	2.1	2.0
2018 Q4	110.6	2.4	2.4	2.3	2.3	2.5	2.1
2019 Q1	99.9	2.7	2.9	2.2	2.6	3.0	2.3
Q2	110.9	2.8	2.8	2.8	2.7	3.2	2.0
Q3	103.5	2.7	2.6	2.6	2.6	2.6	2.6

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

4 Prices and costs

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

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

	Total (index: 2015 =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												
2016	105.4	0.7	1.9	-0.8	0.1	1.1	-0.7	2.3	4.5	0.9	1.1	2.3
2017	106.2	0.7	-0.1	-0.6	1.0	0.3	0.0	-1.3	3.2	1.9	1.4	1.1
2018	108.2	1.8	0.7	1.7	1.0	1.7	1.6	-0.5	3.3	2.2	2.3	2.5
2018 Q4	109.1	2.5	1.8	3.8	1.2	2.3	2.2	0.4	5.0	2.2	2.5	3.0
2019 Q1	109.4	2.3	2.6	3.7	0.9	2.1	1.1	-0.3	5.1	2.0	2.3	1.9
Q2	110.1	2.2	1.2	3.4	1.2	2.0	0.4	-0.6	3.2	2.1	2.5	2.5
Q3	110.7	2.0	0.2	4.3	0.5	1.6	0.4	-0.3	1.8	1.9	2.4	1.8
Compensation per employee												
2016	109.5	1.3	0.1	1.4	1.7	1.6	0.5	1.8	2.9	0.6	1.4	1.5
2017	111.3	1.7	1.1	1.6	2.0	1.4	2.3	1.2	2.2	2.5	1.8	1.6
2018	113.8	2.2	2.4	2.0	1.9	2.4	2.5	1.4	3.2	2.7	2.0	2.3
2018 Q4	114.9	2.3	1.9	1.8	1.7	2.4	2.1	1.4	4.6	3.0	2.1	2.9
2019 Q1	115.4	2.3	1.9	2.1	3.1	2.9	1.9	1.0	4.4	1.9	2.1	2.3
Q2	116.0	2.2	1.8	1.3	3.1	2.4	1.5	1.5	3.7	2.4	2.3	3.0
Q3	116.8	2.2	1.1	2.1	2.7	2.6	1.4	1.3	3.2	2.0	2.1	1.8
Labour productivity per person employed												
2016	103.9	0.6	-1.8	2.2	1.6	0.5	1.2	-0.5	-1.5	-0.2	0.3	-0.8
2017	104.8	0.9	1.2	2.2	0.9	1.1	2.3	2.6	-1.0	0.6	0.5	0.6
2018	105.2	0.4	1.6	0.3	0.9	0.8	0.9	1.9	-0.2	0.5	-0.3	-0.2
2018 Q4	105.3	-0.2	0.0	-1.9	0.5	0.2	-0.1	1.0	-0.4	0.9	-0.4	-0.1
2019 Q1	105.4	0.0	-0.7	-1.6	2.2	0.7	0.8	1.4	-0.6	-0.1	-0.3	0.4
Q2	105.4	0.0	0.6	-2.1	1.9	0.4	1.0	2.2	0.6	0.2	-0.2	0.4
Q3	105.5	0.2	0.9	-2.1	2.2	1.0	0.9	1.6	1.4	0.1	-0.2	0.0
Compensation per hour worked												
2016	111.2	1.0	-0.6	1.2	1.8	0.9	0.5	1.4	2.5	0.2	1.4	1.5
2017	113.3	2.0	1.3	1.8	2.0	1.8	2.4	1.8	2.1	2.4	2.4	2.1
2018	115.8	2.1	1.9	2.1	1.4	2.5	2.6	1.7	2.4	2.7	1.9	2.2
2018 Q4	116.2	2.0	1.4	1.8	1.2	2.0	1.9	1.1	4.3	2.8	1.9	2.4
2019 Q1	116.8	1.9	0.1	1.9	2.4	2.3	1.8	0.9	4.5	1.8	1.9	2.4
Q2	117.6	2.3	2.9	1.6	3.2	2.3	1.8	1.6	3.5	2.3	2.5	3.9
Q3	118.4	2.3	1.8	2.4	2.9	2.6	1.4	1.5	1.7	2.0	2.3	2.6
Hourly labour productivity												
2016	105.7	0.5	-2.1	2.0	1.4	0.3	1.2	-0.9	-2.2	-0.4	0.3	-0.8
2017	107.2	1.4	1.8	2.5	1.1	1.7	2.4	3.1	-0.8	0.8	1.1	1.1
2018	107.7	0.4	0.8	0.5	0.6	1.0	1.1	2.1	-0.9	0.5	-0.4	-0.1
2018 Q4	107.3	-0.4	-0.6	-1.8	0.2	0.1	-0.1	0.6	-0.5	0.6	-0.6	-0.3
2019 Q1	107.5	-0.2	-1.7	-1.8	1.6	0.6	0.8	1.2	-0.2	-0.2	-0.4	0.4
Q2	107.6	0.3	0.5	-1.7	1.9	0.7	1.5	2.1	0.4	0.2	0.1	1.2
Q3	107.7	0.5	1.1	-1.8	2.4	1.4	1.0	1.7	-0.3	0.3	0.0	0.8

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												
2016	1,076.0	6,082.7	7,158.7	1,329.1	2,221.6	3,550.7	10,709.5	69.3	522.6	87.9	679.9	11,389.4
2017	1,112.0	6,638.1	7,750.1	1,196.7	2,261.8	3,458.4	11,208.5	74.4	511.7	72.2	658.3	11,866.9
2018	1,163.3	7,119.0	8,282.3	1,125.2	2,299.0	3,424.1	11,706.5	74.3	523.2	71.5	669.0	12,375.4
2018 Q4	1,163.3	7,119.0	8,282.3	1,125.2	2,299.0	3,424.1	11,706.5	74.3	523.2	71.5	669.0	12,375.4
2019 Q1	1,179.2	7,277.1	8,456.3	1,114.8	2,318.1	3,432.8	11,889.1	74.2	509.3	39.5	623.0	12,512.2
Q2	1,189.0	7,415.3	8,604.3	1,111.2	2,338.5	3,449.7	12,054.1	74.5	513.5	35.3	623.2	12,677.3
Q3	1,204.0	7,605.1	8,809.2	1,110.1	2,354.7	3,464.8	12,274.0	74.5	534.8	19.7	629.1	12,903.0
2019 June	1,189.0	7,415.3	8,604.3	1,111.2	2,338.5	3,449.7	12,054.1	74.5	513.5	35.3	623.2	12,677.3
July	1,193.7	7,486.4	8,680.1	1,104.5	2,344.3	3,448.9	12,129.0	75.7	523.5	37.6	636.9	12,765.8
Aug.	1,198.7	7,572.2	8,770.9	1,114.0	2,347.1	3,461.1	12,232.1	72.3	534.9	25.6	632.7	12,864.8
Sep.	1,204.0	7,605.1	8,809.2	1,110.1	2,354.7	3,464.8	12,274.0	74.5	534.8	19.7	629.1	12,903.0
Oct.	1,209.4	7,672.2	8,881.6	1,094.1	2,357.1	3,451.2	12,332.8	79.6	519.0	32.0	630.6	12,963.3
Nov. [(p)]	1,216.8	7,715.1	8,931.9	1,083.2	2,359.2	3,442.4	12,374.3	73.4	532.7	27.2	633.2	13,007.6
Transactions												
2016	38.5	539.5	578.0	-105.9	16.0	-90.0	488.1	-4.3	34.1	18.9	48.7	536.8
2017	36.0	592.6	628.6	-109.5	34.5	-74.9	553.7	6.5	-10.8	-18.9	-23.1	530.5
2018	50.3	465.3	515.6	-74.2	45.1	-29.1	486.5	-0.9	11.6	-2.9	7.8	494.3
2018 Q4	13.1	112.4	125.5	-8.3	14.2	5.9	131.4	2.5	26.9	9.2	38.6	170.0
2019 Q1	15.9	156.3	172.2	-12.7	19.6	6.8	179.0	-0.3	-20.8	-28.5	-49.5	129.5
Q2	9.8	143.0	152.7	-4.4	20.3	15.8	168.6	0.4	4.5	-3.8	1.1	169.7
Q3	15.1	180.8	195.8	-4.6	14.8	10.2	206.0	-0.6	20.0	-15.2	4.2	210.2
2019 June	3.1	54.9	57.9	-10.6	4.7	-5.9	52.0	3.6	0.0	-7.5	-3.8	48.1
July	4.7	68.0	72.7	-8.1	5.8	-2.3	70.4	1.1	8.8	1.2	11.1	81.5
Aug.	5.0	83.1	88.1	8.3	2.8	11.1	99.2	-3.7	11.3	-11.5	-3.8	95.4
Sep.	5.3	29.7	35.1	-4.8	6.2	1.5	36.5	2.0	-0.2	-5.0	-3.1	33.4
Oct.	5.4	70.0	75.3	-14.2	1.8	-12.4	63.0	5.5	-15.9	13.5	3.1	66.0
Nov. [(p)]	7.4	39.7	47.1	-12.2	0.8	-11.4	35.7	-6.5	13.8	-4.2	3.1	38.7
Growth rates												
2016	3.7	9.7	8.7	-7.4	0.7	-2.5	4.8	-5.9	7.0	26.5	7.7	5.0
2017	3.3	9.8	8.8	-8.3	1.6	-2.1	5.2	9.5	-2.1	-21.5	-3.4	4.7
2018	4.5	7.0	6.6	-6.2	2.0	-0.8	4.3	-1.3	2.3	-4.2	1.2	4.2
2018 Q4	4.5	7.0	6.6	-6.2	2.0	-0.8	4.3	-1.3	2.3	-4.2	1.2	4.2
2019 Q1	5.9	7.7	7.5	-5.3	2.6	-0.1	5.2	2.4	-1.7	-41.8	-5.6	4.6
Q2	4.7	7.7	7.2	-6.1	3.0	-0.1	5.0	1.1	-0.9	-42.6	-4.8	4.5
Q3	4.7	8.5	7.9	-2.6	3.0	1.1	5.9	3.0	6.1	-64.5	-0.9	5.6
2019 June	4.7	7.7	7.2	-6.1	3.0	-0.1	5.0	1.1	-0.9	-42.6	-4.8	4.5
July	4.9	8.3	7.8	-5.4	3.0	0.2	5.5	10.4	1.1	-36.7	-1.5	5.1
Aug.	4.8	9.0	8.4	-3.1	2.9	0.9	6.2	-1.1	4.9	-58.8	-2.2	5.7
Sep.	4.7	8.5	7.9	-2.6	3.0	1.1	5.9	3.0	6.1	-64.5	-0.9	5.6
Oct.	4.8	9.0	8.4	-4.3	2.9	0.5	6.1	10.1	1.6	-39.2	-1.4	5.7
Nov. [(p)]	5.0	8.8	8.3	-4.5	2.7	0.3	6.0	-1.2	4.6	-45.9	-0.7	5.6

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													
2016	2,093.8	1,632.5	293.3	159.9	8.0	6,057.4	3,403.3	645.6	2,006.2	2.3	964.3	200.8	386.6
2017	2,240.3	1,797.4	285.0	149.1	8.8	6,317.7	3,702.8	562.2	2,051.9	0.8	991.1	206.6	415.3
2018	2,335.5	1,902.9	277.2	147.8	7.6	6,645.0	4,035.9	517.6	2,090.1	1.4	998.4	203.1	435.4
2018 Q4	2,335.5	1,902.9	277.2	147.8	7.6	6,645.0	4,035.9	517.6	2,090.1	1.4	998.4	203.1	435.4
2019 Q1	2,380.3	1,956.0	270.1	148.1	6.1	6,752.9	4,126.3	514.9	2,110.4	1.4	978.0	213.0	460.0
Q2	2,406.1	1,983.7	265.3	150.0	7.1	6,847.0	4,207.8	509.9	2,127.6	1.7	1,009.5	216.6	460.4
Q3	2,450.3	2,030.7	262.2	151.4	5.9	6,965.1	4,318.3	504.6	2,141.3	1.0	1,042.3	221.3	465.4
2019 June	2,406.1	1,983.7	265.3	150.0	7.1	6,847.0	4,207.8	509.9	2,127.6	1.7	1,009.5	216.6	460.4
July	2,429.0	2,008.1	264.1	150.4	6.4	6,894.2	4,250.7	508.8	2,132.9	1.8	1,009.3	220.7	457.8
Aug.	2,462.0	2,040.0	264.4	151.0	6.6	6,927.8	4,283.4	507.4	2,135.4	1.7	1,022.9	231.5	461.3
Sep.	2,450.3	2,030.7	262.2	151.4	5.9	6,965.1	4,318.3	504.6	2,141.3	1.0	1,042.3	221.3	465.4
Oct.	2,471.9	2,052.8	260.1	151.0	7.9	6,994.7	4,349.2	500.5	2,143.3	1.7	1,047.7	222.8	465.9
Nov. (p)	2,481.1	2,072.9	251.3	151.4	5.6	7,026.9	4,383.0	497.1	2,145.1	1.7	1,024.3	227.6	471.0
Transactions													
2016	131.9	157.0	-25.5	0.4	0.1	301.1	334.8	-46.3	13.6	-0.9	21.2	-28.6	19.6
2017	180.7	182.4	-1.9	-0.8	0.9	254.7	304.7	-82.1	33.6	-1.5	54.9	7.2	26.7
2018	92.8	105.0	-9.8	-1.1	-1.4	326.5	324.8	-45.0	46.1	0.5	0.8	-4.2	19.3
2018 Q4	28.9	21.2	7.4	-0.2	0.4	95.1	87.2	-7.1	14.8	0.2	4.2	-8.2	0.8
2019 Q1	47.4	54.8	-7.2	0.7	-0.9	106.7	89.7	-3.2	20.3	0.0	-24.6	9.3	24.1
Q2	29.4	30.5	-4.4	2.2	1.1	94.1	82.1	-5.0	16.7	0.3	31.7	3.9	0.1
Q3	40.1	43.3	-2.9	1.0	-1.3	117.1	109.8	-6.0	13.9	-0.6	25.0	3.9	4.3
2019 June	7.3	9.3	-3.3	1.0	0.3	23.7	21.9	-1.8	3.5	0.1	18.5	1.5	1.7
July	22.2	23.2	-0.4	0.2	-0.8	46.8	42.8	-1.4	5.3	0.1	-3.6	4.0	-2.7
Aug.	31.1	30.5	-0.1	0.6	0.1	33.4	32.6	-1.6	2.5	-0.1	11.8	10.6	3.6
Sep.	-13.2	-10.4	-2.3	0.1	-0.7	37.0	34.5	-2.9	6.1	-0.7	16.8	-10.7	3.4
Oct.	24.3	24.4	-1.6	-0.6	2.1	29.7	30.1	-3.7	2.7	0.7	7.5	1.3	0.3
Nov. (p)	7.0	19.0	-9.1	-0.5	-2.4	31.5	33.6	-3.7	1.6	0.0	-25.9	4.2	5.0
Growth rates													
2016	6.8	10.4	-8.0	0.3	0.8	5.2	10.9	-6.7	0.6	-28.4	2.2	-12.5	5.3
2017	8.6	11.2	-0.7	-0.5	11.5	4.2	9.0	-12.7	1.7	-65.1	5.8	3.6	6.9
2018	4.1	5.8	-3.5	-0.7	-16.5	5.2	8.8	-8.0	2.3	67.7	0.1	-2.0	4.6
2018 Q4	4.1	5.8	-3.5	-0.7	-16.5	5.2	8.8	-8.0	2.3	67.7	0.1	-2.0	4.6
2019 Q1	5.9	7.6	-2.3	0.2	-17.1	5.7	8.9	-5.6	2.9	-17.2	-2.2	0.5	10.4
Q2	5.8	7.6	-4.6	2.3	12.2	5.8	8.6	-4.9	3.1	72.0	-0.9	-1.5	7.7
Q3	6.3	8.0	-2.6	2.6	-11.8	6.3	9.3	-4.0	3.2	-10.1	3.6	4.1	6.7
2019 June	5.8	7.6	-4.6	2.3	12.2	5.8	8.6	-4.9	3.1	72.0	-0.9	-1.5	7.7
July	6.8	8.6	-2.5	2.4	-8.1	6.1	9.1	-4.5	3.1	13.9	0.0	1.8	6.9
Aug.	7.8	9.6	-2.0	2.4	3.1	6.2	9.2	-4.0	3.0	6.1	3.2	8.7	6.2
Sep.	6.3	8.0	-2.6	2.6	-11.8	6.3	9.3	-4.0	3.2	-10.1	3.6	4.1	6.7
Oct.	7.2	9.1	-3.8	2.1	31.9	6.2	9.2	-4.1	3.1	30.9	4.2	6.2	5.9
Nov. (p)	7.0	9.8	-8.4	1.8	-24.6	6.3	9.4	-4.2	2.9	30.5	1.5	8.7	5.7

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												
2016	4,382.4	1,083.1	3,286.0	12,879.6	10,708.6	10,980.9	4,310.3	5,449.8	835.8	112.8	1,385.8	785.2
2017	4,617.2	1,032.3	3,571.0	13,114.1	10,870.5	11,165.0	4,323.5	5,600.2	838.0	108.7	1,440.4	803.2
2018	4,675.5	1,006.3	3,657.8	13,415.5	11,122.5	11,478.1	4,405.7	5,742.1	847.9	126.8	1,517.4	775.6
2018 Q4	4,675.5	1,006.3	3,657.8	13,415.5	11,122.5	11,478.1	4,405.7	5,742.1	847.9	126.8	1,517.4	775.6
2019 Q1	4,662.3	1,001.5	3,649.4	13,526.8	11,201.0	11,553.0	4,426.2	5,787.7	856.3	130.7	1,527.1	798.8
Q2	4,640.1	1,000.7	3,627.8	13,640.3	11,290.6	11,665.3	4,462.4	5,825.8	870.3	132.1	1,546.5	803.1
Q3	4,696.5	999.8	3,685.1	13,775.6	11,394.4	11,762.7	4,488.5	5,876.3	883.5	146.2	1,569.8	811.5
2019 June	4,640.1	1,000.7	3,627.8	13,640.3	11,290.6	11,665.3	4,462.4	5,825.8	870.3	132.1	1,546.5	803.1
July	4,672.9	1,000.5	3,660.7	13,683.0	11,334.9	11,705.9	4,483.5	5,843.4	873.6	134.4	1,541.3	806.8
Aug.	4,707.5	1,003.8	3,692.0	13,736.7	11,388.3	11,748.2	4,505.0	5,864.6	878.3	140.4	1,544.8	803.5
Sep.	4,696.5	999.8	3,685.1	13,775.6	11,394.4	11,762.7	4,488.5	5,876.3	883.5	146.2	1,569.8	811.5
Oct.	4,665.1	1,001.8	3,651.6	13,820.4	11,423.2	11,786.4	4,502.5	5,894.9	887.0	138.9	1,563.5	833.7
Nov. [p)]	4,639.6	1,000.8	3,627.0	13,855.0	11,438.7	11,806.8	4,491.8	5,913.3	887.9	145.8	1,572.0	844.3
Transactions												
2016	484.0	-34.6	518.5	319.0	234.8	259.5	81.6	121.1	43.2	-11.1	79.9	4.4
2017	287.5	-43.7	330.6	363.3	274.2	315.8	84.9	173.2	19.7	-3.5	63.7	25.4
2018	89.4	-28.4	117.9	375.5	307.5	379.6	123.8	166.3	-0.4	17.8	88.6	-20.6
2018 Q4	29.6	2.4	27.3	65.0	57.7	88.1	16.0	42.4	-4.2	3.5	11.2	-4.0
2019 Q1	-29.8	-5.5	-24.4	110.0	92.4	90.7	32.4	49.1	8.5	2.3	0.7	16.9
Q2	-49.5	-1.5	-48.2	124.0	105.6	126.5	50.8	38.8	17.5	-1.5	17.6	0.8
Q3	-2.0	-0.9	-1.1	129.1	102.3	105.2	27.2	52.0	9.2	13.9	20.2	6.6
2019 June	-22.5	-3.9	-18.5	46.2	39.0	49.2	8.4	18.7	7.6	4.4	9.8	-2.7
July	6.4	-0.3	6.7	39.7	44.3	42.0	22.3	17.8	2.0	2.2	-7.2	2.5
Aug.	5.4	3.2	2.2	50.8	51.6	44.1	20.9	21.3	3.5	5.9	1.5	-2.3
Sep.	-13.9	-3.8	-10.0	38.6	6.3	19.2	-16.0	13.0	3.6	5.7	25.8	6.4
Oct.	-17.5	2.3	-19.8	36.5	36.7	35.8	18.1	20.4	5.5	-7.2	-5.6	5.3
Nov. [p)]	-9.1	-0.9	-8.4	32.4	15.1	21.6	-4.6	19.0	-6.2	6.9	8.1	9.2
Growth rates												
2016	12.4	-3.1	18.6	2.5	2.2	2.4	1.9	2.3	5.5	-9.0	6.1	0.6
2017	6.6	-4.1	10.2	2.8	2.6	2.9	2.0	3.2	2.4	-3.2	4.6	3.2
2018	2.0	-2.8	3.3	2.9	2.8	3.4	2.9	3.0	-0.1	16.4	6.2	-2.6
2018 Q4	2.0	-2.8	3.3	2.9	2.8	3.4	2.9	3.0	-0.1	16.4	6.2	-2.6
2019 Q1	1.8	-2.4	3.0	2.8	2.7	3.3	2.5	3.1	-1.0	14.7	4.1	1.8
Q2	-0.2	-2.0	0.3	3.1	3.2	3.5	3.3	3.2	1.7	5.9	3.2	1.3
Q3	-1.1	-0.5	-1.3	3.2	3.2	3.6	2.9	3.2	3.6	14.4	3.3	2.6
2019 June	-0.2	-2.0	0.3	3.1	3.2	3.5	3.3	3.2	1.7	5.9	3.2	1.3
July	-0.5	-1.5	-0.3	2.9	3.2	3.6	3.3	3.2	2.5	7.2	1.5	1.8
Aug.	-0.6	-0.4	-0.7	3.1	3.5	3.8	3.5	3.3	3.2	12.9	1.2	2.1
Sep.	-1.1	-0.5	-1.3	3.2	3.2	3.6	2.9	3.2	3.6	14.4	3.3	2.6
Oct.	-1.4	-0.1	-1.7	3.2	3.3	3.7	3.1	3.3	3.8	11.0	2.3	3.4
Nov. [p)]	-1.4	-0.3	-1.7	3.2	3.2	3.6	2.6	3.3	3.7	16.2	3.0	4.2

Source: ECB.

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

2) Adjusted for loan sales and securitisation (resulting in derecognition from the MFI statistical balance sheet) as well as for positions arising from notional cash pooling services provided by MFIs.

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

4) Including non-profit institutions serving households.

5 Money and credit

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

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

	Non-financial corporations [2)]					Households [3)]				
	Total		Up to 1 year	Over 1 and up to 5 years	Over 5 years	Total		Loans for consumption	Loans for house purchase	Other loans
		Adjusted loans [4)]					Adjusted loans [4)]			
	1	2	3	4	5	6	7	8	9	10
Outstanding amounts										
2016	4,310.3	4,308.4	1,012.2	796.5	2,501.6	5,449.8	5,729.0	616.5	4,083.7	749.6
2017	4,323.5	4,358.8	986.2	821.2	2,516.2	5,600.2	5,866.6	654.9	4,216.3	729.0
2018	4,405.7	4,488.8	993.0	845.4	2,567.3	5,742.1	6,023.0	684.6	4,352.7	704.7
2018 Q4	4,405.7	4,488.8	993.0	845.4	2,567.3	5,742.1	6,023.0	684.6	4,352.7	704.7
2019 Q1	4,426.2	4,511.3	980.6	853.0	2,592.6	5,787.7	6,065.6	694.4	4,391.0	702.3
Q2	4,462.4	4,554.1	977.6	867.2	2,617.6	5,825.8	6,113.9	705.4	4,422.2	698.1
Q3	4,488.5	4,581.9	982.0	873.5	2,633.0	5,876.3	6,164.6	713.1	4,468.9	694.3
2019 June	4,462.4	4,554.1	977.6	867.2	2,617.6	5,825.8	6,113.9	705.4	4,422.2	698.1
July	4,483.5	4,569.6	983.2	872.9	2,627.4	5,843.4	6,133.3	708.6	4,437.6	697.2
Aug.	4,505.0	4,591.9	995.8	876.3	2,632.9	5,864.6	6,150.7	711.7	4,456.5	696.5
Sep.	4,488.5	4,581.9	982.0	873.5	2,633.0	5,876.3	6,164.6	713.1	4,468.9	694.3
Oct.	4,502.5	4,592.6	983.6	877.8	2,641.1	5,894.9	6,181.4	715.2	4,488.2	691.6
Nov. [(p)]	4,491.8	4,588.4	972.2	883.2	2,636.4	5,913.3	6,200.8	718.5	4,502.2	692.6
Transactions										
2016	81.6	100.6	-14.3	43.2	52.7	121.1	113.9	24.2	105.2	-8.4
2017	84.9	134.8	0.6	39.1	45.2	173.2	164.9	45.1	134.0	-5.9
2018	123.8	174.1	18.5	33.8	71.4	166.3	187.8	40.3	135.8	-9.7
2018 Q4	16.0	37.5	-1.6	8.2	9.4	42.4	49.9	8.9	37.7	-4.3
2019 Q1	32.4	32.1	-10.9	10.4	33.0	49.1	49.2	10.6	39.4	-0.9
Q2	50.8	54.9	0.9	17.1	32.8	38.8	49.9	12.2	28.8	-2.3
Q3	27.2	34.0	3.7	6.2	17.3	52.0	55.6	8.5	46.2	-2.7
2019 June	8.4	16.9	-1.0	4.2	5.2	18.7	15.7	4.2	14.5	0.1
July	22.3	17.6	5.1	5.9	11.3	17.8	19.8	3.5	15.1	-0.9
Aug.	20.9	24.7	12.1	3.2	5.7	21.3	17.9	3.2	18.5	-0.4
Sep.	-16.0	-8.2	-13.5	-2.8	0.3	13.0	18.0	1.8	12.6	-1.4
Oct.	18.1	16.9	3.1	5.0	9.9	20.4	20.6	2.3	20.3	-2.2
Nov. [(p)]	-4.6	2.4	-8.1	5.5	-2.0	19.0	20.9	4.0	14.1	1.0
Growth rates										
2016	1.9	2.4	-1.4	5.7	2.1	2.3	2.0	4.1	2.7	-1.1
2017	2.0	3.2	0.1	5.0	1.8	3.2	2.9	7.3	3.3	-0.8
2018	2.9	4.0	1.9	4.2	2.8	3.0	3.2	6.2	3.2	-1.4
2018 Q4	2.9	4.0	1.9	4.2	2.8	3.0	3.2	6.2	3.2	-1.4
2019 Q1	2.5	3.7	-1.3	4.6	3.3	3.1	3.3	6.0	3.5	-1.5
Q2	3.3	3.9	0.2	5.6	3.8	3.2	3.3	6.3	3.4	-1.1
Q3	2.9	3.6	-0.8	5.0	3.6	3.2	3.4	6.0	3.5	-1.4
2019 June	3.3	3.9	0.2	5.6	3.8	3.2	3.3	6.3	3.4	-1.1
July	3.3	4.0	-0.4	5.7	4.0	3.2	3.4	6.2	3.5	-1.2
Aug.	3.5	4.2	0.6	5.9	3.8	3.3	3.4	6.1	3.5	-1.2
Sep.	2.9	3.6	-0.8	5.0	3.6	3.2	3.4	6.0	3.5	-1.4
Oct.	3.1	3.8	0.6	4.8	3.5	3.3	3.5	5.7	3.7	-1.7
Nov. [(p)]	2.6	3.4	-0.7	4.4	3.2	3.3	3.5	5.8	3.7	-1.5

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										
2016	306.5	6,957.3	2,088.6	71.0	2,148.4	2,649.3	1,127.6	263.5	205.9	121.6
2017	342.7	6,771.0	1,967.4	59.8	2,017.5	2,726.2	938.5	310.8	143.5	92.5
2018	379.3	6,819.0	1,940.5	56.1	2,099.3	2,723.2	1,029.8	453.0	187.0	194.9
2018 Q4	379.3	6,819.0	1,940.5	56.1	2,099.3	2,723.2	1,029.8	453.0	187.0	194.9
2019 Q1	370.0	6,906.4	1,937.1	55.9	2,145.7	2,767.6	1,180.7	418.8	199.0	212.3
Q2	373.7	6,984.2	1,956.6	57.5	2,135.0	2,835.2	1,322.1	432.8	191.5	207.8
Q3	388.0	7,100.2	1,947.3	57.2	2,162.2	2,933.6	1,478.6	440.5	184.2	198.1
2019 June	373.7	6,984.2	1,956.6	57.5	2,135.0	2,835.2	1,322.1	432.8	191.5	207.8
July	374.5	7,018.2	1,931.1	57.7	2,150.5	2,878.9	1,404.1	398.5	206.5	224.1
Aug.	403.5	7,060.0	1,916.5	57.3	2,148.4	2,937.7	1,461.2	422.9	212.6	231.5
Sep.	388.0	7,100.2	1,947.3	57.2	2,162.2	2,933.6	1,478.6	440.5	184.2	198.1
Oct.	380.5	7,074.6	1,948.5	55.0	2,148.1	2,923.0	1,480.2	452.8	221.4	236.2
Nov. [(p)]	369.1	7,080.2	1,952.2	52.6	2,164.1	2,911.3	1,515.9	446.4	211.8	224.8
Transactions										
2016	21.7	-123.0	-71.3	-8.6	-118.5	75.4	-277.6	-89.9	12.8	-12.0
2017	39.0	-73.4	-83.5	-6.6	-71.1	87.8	-92.8	-61.9	-61.2	-28.5
2018	40.5	47.2	-37.9	-4.9	17.4	72.7	79.9	37.1	16.2	23.6
2018 Q4	-22.2	20.3	-1.7	-0.8	5.9	17.0	36.6	36.9	9.7	11.9
2019 Q1	-9.1	43.9	-10.4	-0.2	36.9	17.5	116.7	-32.5	2.7	5.5
Q2	3.8	46.0	21.9	1.6	-0.1	22.5	109.5	35.4	-7.1	-4.5
Q3	14.6	12.8	-15.2	-1.0	5.1	24.0	84.0	26.6	6.9	7.4
2019 June	5.7	42.7	25.3	1.0	8.0	8.4	23.7	49.1	-20.8	-21.4
July	0.7	-5.2	-26.8	0.2	9.3	12.1	56.3	-25.3	14.9	16.3
Aug.	29.1	-20.5	-17.2	-0.4	-7.8	4.8	8.4	39.2	6.1	7.4
Sep.	-15.2	38.5	28.7	-0.9	3.6	7.0	19.3	12.7	-14.1	-16.3
Oct.	-7.3	-12.4	2.9	-2.0	-22.2	8.8	24.1	3.3	37.3	38.1
Nov. [(p)]	-11.3	22.1	2.4	-1.3	6.4	14.5	36.9	-10.8	-9.7	-11.4
Growth rates										
2016	7.7	-1.7	-3.4	-10.9	-5.3	2.9	-	-	6.3	-9.0
2017	12.6	-1.1	-4.0	-9.6	-3.4	3.4	-	-	-29.8	-23.5
2018	11.8	0.7	-1.9	-8.1	0.8	2.7	-	-	8.1	7.7
2018 Q4	11.8	0.7	-1.9	-8.1	0.8	2.7	-	-	8.1	7.7
2019 Q1	8.9	1.3	-1.6	-6.4	2.5	2.7	-	-	17.8	21.2
Q2	12.6	2.1	-0.4	-1.3	3.2	3.2	-	-	5.1	6.7
Q3	-3.2	1.8	-0.3	-0.7	2.3	3.0	-	-	6.9	11.0
2019 June	12.6	2.1	-0.4	-1.3	3.2	3.2	-	-	5.1	6.7
July	5.8	1.9	-1.8	0.4	3.9	3.3	-	-	7.1	9.9
Aug.	5.7	1.7	-2.2	0.4	3.5	3.1	-	-	11.9	15.6
Sep.	-3.2	1.8	-0.3	-0.7	2.3	3.0	-	-	6.9	11.0
Oct.	-2.9	1.4	0.0	-3.6	1.0	2.9	-	-	36.4	38.9
Nov. [(p)]	-4.4	1.8	0.3	-4.7	1.3	3.2	-	-	11.1	12.8

Source: ECB.

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

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

3) Not adjusted for seasonal effects.

6 Fiscal developments

6.1 Deficit/surplus

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

	Deficit (-)/surplus (+)					Memo item: Primary deficit (-)/ surplus (+)
	Total	Central government	State government	Local government	Social security funds	
	1	2	3	4	5	6
2015	-2.0	-1.9	-0.2	0.2	-0.1	0.3
2016	-1.4	-1.7	0.0	0.2	0.1	0.7
2017	-0.9	-1.3	0.1	0.2	0.1	1.0
2018	-0.5	-1.1	0.1	0.2	0.3	1.3
2018 Q4	-0.5	.	.	.	.	1.3
2019 Q1	-0.6	.	.	.	.	1.2
Q2	-0.7	.	.	.	.	1.1
Q3	-0.8	.	.	.	.	1.0

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
2015	46.4	45.8	12.5	13.0	15.2	0.6	48.4	44.5	10.1	5.3	2.3	22.7	3.9
2016	46.2	45.7	12.6	13.0	15.3	0.5	47.7	44.1	10.0	5.3	2.1	22.7	3.6
2017	46.2	45.8	12.8	13.0	15.2	0.4	47.2	43.4	9.9	5.3	1.9	22.5	3.8
2018	46.5	46.0	13.0	13.0	15.2	0.5	47.0	43.3	9.9	5.3	1.8	22.3	3.7
2018 Q4	46.5	46.0	13.0	13.0	15.2	0.5	47.0	43.3	9.9	5.3	1.8	22.3	3.7
2019 Q1	46.4	46.0	12.9	13.1	15.2	0.5	47.0	43.3	9.9	5.3	1.8	22.4	3.7
Q2	46.4	46.0	12.9	13.0	15.2	0.4	47.1	43.4	9.9	5.3	1.8	22.5	3.7
Q3	46.4	45.9	12.9	13.1	15.1	0.4	47.1	43.4	9.9	5.3	1.7	22.5	3.7

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

6.3 Government debt-to-GDP ratio

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

	Total	Financial instrument			Holder			Original maturity		Residual maturity			Currency	
		Currency and deposits	Loans	Debt securities	Resident creditors	MFIs	Non-resident creditors	Up to 1 year	Over 1 year	Up to 1 year	Over 1 and up to 5 years	Over 5 years	Euro or participating currencies	Other curren-cies
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2015	90.8	3.4	16.5	71.0	45.0	27.6	45.8	9.7	81.2	18.3	31.1	41.4	88.8	2.1
2016	90.0	3.3	15.7	71.0	47.5	30.8	42.5	9.4	80.6	17.9	29.8	42.3	87.9	2.1
2017	87.8	3.2	14.5	70.1	48.2	32.2	39.5	8.6	79.1	16.4	29.0	42.3	86.0	1.8
2018	85.9	3.1	13.8	69.0	48.0	32.4	37.8	8.0	77.8	16.1	28.3	41.4	84.5	1.4
2018 Q4	85.9	3.1	13.8	69.0	.	.	.	.	.	.	.	.	.	.
2019 Q1	86.5	3.1	13.6	69.8	.	.	.	.	.	.	.	.	.	.
Q2	86.4	3.1	13.5	69.8	.	.	.	.	.	.	.	.	.	.
Q3	86.1	3.2	13.3	69.5	.	.	.	.	.	.	.	.	.	.

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
2015	-1.9	-0.3	-0.8	-0.5	0.2	-0.3	-0.3	-0.1	0.0	-0.3	-0.8	1.2
2016	-0.8	-0.7	0.2	0.1	0.3	-0.1	0.0	0.1	0.0	0.0	-0.3	1.6
2017	-2.3	-1.0	-0.1	0.3	0.5	0.0	-0.2	0.1	-0.1	-0.3	-1.1	0.9
2018	-1.9	-1.3	0.4	0.3	0.4	-0.1	0.0	0.2	0.0	0.1	-0.9	0.8
2018 Q4	-1.9	-1.3	0.4	0.5	0.4	-0.1	0.0	0.2	0.0	-0.1	-0.9	0.8
2019 Q1	-1.3	-1.2	0.7	0.6	0.6	-0.1	0.0	0.2	0.1	0.0	-0.8	1.2
Q2	-0.9	-1.1	0.8	0.8	0.7	-0.1	0.0	0.2	0.1	0.0	-0.6	1.5
Q3	-1.1	-1.0	0.6	0.4	0.2	-0.1	0.0	0.2	0.0	0.3	-0.8	1.4

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
2016	14.1	12.4	4.6	1.7	0.4	6.9	2.6	1.2	-0.1	3.0	2.9	0.2	1.2
2017	12.9	11.2	4.2	1.7	0.4	7.1	2.4	1.1	-0.2	2.8	2.3	0.3	1.1
2018	12.6	11.1	3.7	1.5	0.4	7.3	2.3	1.1	-0.1	2.7	2.5	0.4	0.9
2018 Q3	12.7	11.1	3.7	1.6	0.4	7.3	2.3	1.1	-0.1	2.7	2.6	0.4	0.9
Q4	12.6	11.1	3.7	1.5	0.4	7.3	2.3	1.1	-0.1	2.7	2.5	0.4	0.9
2019 Q1	12.7	11.2	3.8	1.5	0.4	7.4	2.3	1.1	0.0	2.6	2.5	0.5	1.0
Q2	12.9	11.4	3.7	1.5	0.4	7.4	2.3	1.3	0.0	2.6	2.3	0.5	0.9
2019 July	13.0	11.5	4.1	1.5	0.4	7.5	2.3	1.3	-0.1	2.6	2.3	0.4	1.0
Aug.	12.9	11.4	4.2	1.5	0.4	7.4	2.2	1.3	-0.1	2.6	2.3	0.4	1.1
Sep.	13.1	11.6	3.9	1.5	0.4	7.4	2.2	1.3	-0.1	2.5	2.1	0.3	1.0
Oct.	12.8	11.3	3.5	1.5	0.4	7.5	2.2	1.3	-0.1	2.5	2.1	0.3	1.2
Nov.	12.9	11.5	3.5	1.4	0.4	7.5	2.1	1.3	-0.1	2.4	2.0	0.3	1.2
Dec.	12.5	11.1	3.7	1.4	0.4	7.5	2.1	1.3	-0.1	2.4	2.0	0.3	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 (+)								
2015	-2.4	0.9	0.1	-1.9	-5.6	-5.2	-3.6	-2.6	-1.0
2016	-2.4	1.2	-0.5	-0.7	0.5	-4.3	-3.5	-2.4	0.1
2017	-0.7	1.2	-0.8	-0.3	0.7	-3.0	-2.8	-2.4	1.7
2018	-0.7	1.9	-0.6	0.1	1.0	-2.5	-2.5	-2.2	-4.4
2018 Q4	-0.8	1.9	-0.6	0.1	1.0	-2.5	-2.5	-2.2	-4.4
2019 Q1	-1.1	1.8	-0.7	0.1	0.3	-2.6	-2.9	-2.2	-3.8
Q2	-1.5	1.7	-0.6	0.7	0.5	-2.9	-3.2	-2.1	-3.6
Q3	-1.7	1.6	-0.4	1.0	0.8	-2.8	-3.3	-2.1	3.7
	Government debt								
2015	105.2	72.1	10.0	76.7	175.9	99.3	95.6	135.3	107.5
2016	104.9	69.2	10.2	73.9	178.5	99.2	98.0	134.8	103.4
2017	101.8	65.3	9.3	67.8	176.2	98.6	98.4	134.1	93.9
2018	100.0	61.9	8.4	63.6	181.2	97.6	98.4	134.8	100.6
2018 Q4	102.1	61.9	8.4	63.6	181.2	97.6	98.4	134.8	100.6
2019 Q1	103.1	61.7	8.0	65.4	182.0	98.9	99.7	136.5	103.1
Q2	102.5	61.1	9.3	63.9	179.6	98.9	99.6	138.0	107.0
Q3	102.3	61.2	9.2	62.6	178.2	97.9	100.5	137.3	97.8

	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Austria	Portugal	Slovenia	Slovakia	Finland
	10	11	12	13	14	15	16	17	18	19
	Government deficit (-)/surplus (+)									
2015	-1.4	-0.3	1.4	-1.0	-2.0	-1.0	-4.4	-2.8	-2.7	-2.4
2016	0.1	0.2	1.8	0.9	0.0	-1.5	-1.9	-1.9	-2.5	-1.7
2017	-0.5	0.5	1.4	3.4	1.3	-0.7	-3.0	0.0	-1.0	-0.7
2018	-0.7	0.6	2.7	1.9	1.5	0.2	-0.4	0.8	-1.1	-0.8
2018 Q4	-0.7	0.6	2.7	1.9	1.5	0.2	-0.4	0.8	-1.1	-0.8
2019 Q1	-0.7	0.2	3.1	1.7	1.7	-0.1	-0.1	0.6	-1.1	-1.1
Q2	-1.0	0.0	3.3	1.2	1.8	0.1	0.2	0.6	-1.0	-1.4
Q3	-0.7	-0.3	2.4	0.8	1.7	0.1	0.0	0.9	-1.2	-2.2
	Government debt									
2015	36.7	42.7	22.0	57.8	64.6	84.9	131.2	82.6	51.9	63.0
2016	40.2	39.9	20.1	55.5	61.9	82.9	131.5	78.7	52.0	62.6
2017	38.6	39.3	22.3	50.3	56.9	78.3	126.0	74.1	51.3	60.9
2018	36.4	34.1	21.0	45.8	52.4	74.0	122.2	70.4	49.4	59.0
2018 Q4	36.4	34.1	21.0	45.8	52.4	74.0	122.2	70.4	49.1	59.0
2019 Q1	37.7	34.0	20.8	46.2	50.9	72.7	123.7	68.1	49.3	58.9
Q2	36.7	36.1	20.4	45.4	50.9	71.8	121.1	67.7	48.6	60.9
Q3	36.4	35.9	20.2	43.1	49.3	71.1	120.5	68.1	48.4	59.4

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