



EUROPEAN CENTRAL BANK  
EUROSYSTEM

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# Update on economic and monetary developments

## Summary

The information that has become available since the Governing Council's monetary policy meeting in March confirms slower growth momentum extending into the current year. While there are signs that some of the idiosyncratic domestic factors dampening growth are fading, global headwinds continue to weigh on euro area growth developments. The risks surrounding the euro area growth outlook remain tilted to the downside, on account of the persistence of uncertainties related to geopolitical factors, the threat of protectionism and vulnerabilities in emerging markets. At the same time, further employment gains and rising wages continue to underpin the resilience of the domestic economy and gradually rising inflation pressures. However, an ample degree of monetary accommodation remains necessary to safeguard favourable financing conditions and support the economic expansion, and thus to ensure that inflation remains on a sustained path towards levels that are below, but close to, 2% over the medium term. Significant monetary policy stimulus is being provided by the Governing Council's forward guidance on the key ECB interest rates, reinforced by the reinvestments of the sizeable stock of acquired assets and the new series of targeted longer-term refinancing operations (TLTROs).

Survey indicators of global economic activity have weakened in the first quarter of 2019. In particular, global trade has continued to slow down amid the turning of the global industrial cycle and heightened trade tensions. Global inflation has subsided in the first months of this year, largely on account of a lower contribution from the energy component.

Euro area government bond yields overall declined somewhat as global risk-free rates decreased and the EONIA forward curve shifted downwards. Developments in sovereign bond spreads exhibited some heterogeneity across the euro area. Equity prices rose amid lower risk-free rates and stable and low volatility. Accordingly, yield spreads on corporate bonds narrowed. In foreign exchange markets, the euro remained broadly unchanged in trade-weighted terms.

Euro area real GDP rose by 0.2%, quarter on quarter, in the fourth quarter of 2018, following an increase of 0.1% in the third quarter. Incoming data continued to be weak, mainly on account of the slowdown in external demand, compounded by country and sector-specific factors. As the impact of these factors is turning out to be somewhat longer-lasting, the slower growth momentum is expected to extend into the current year. Looking ahead, the effect of these adverse factors is expected to unwind. The euro area expansion will continue to be supported by favourable financing conditions, further employment gains and rising wages, and the ongoing – albeit somewhat slower – expansion in global activity.

According to Eurostat's flash estimate, euro area annual HICP inflation was 1.4% in March 2019, after 1.5% in February 2019, reflecting mainly a decline in food, services and non-energy industrial goods price inflation. On the basis of current futures prices for oil, headline inflation is likely to decline over the coming months. Measures of underlying inflation have remained generally muted, but labour cost pressures have strengthened and broadened amid high levels of capacity utilisation and tightening labour markets. Looking ahead, underlying inflation is expected to increase gradually over the medium term, supported by the ECB's monetary policy measures, the ongoing economic expansion and rising wage growth.

Regarding monetary developments, broad money (M3) growth increased to 4.3% in February 2019, from 3.8% in January. M3 growth continues to be backed by bank credit creation and the narrow monetary aggregate M1 remained the main contributor to broad money growth. The annual growth rate of loans to non-financial corporations rebounded to 3.7% in February 2019 and has moderated in recent months, reflecting the typical lagged reaction to the slowdown in economic growth. The annual growth rate of loans to households remained broadly unchanged at 3.3% in February. The euro area bank lending survey for the first quarter of 2019 suggests that overall bank lending conditions remained favourable.

Combining the outcome of the economic analysis with the signals coming from the monetary analysis, the Governing Council concluded that an ample degree of monetary accommodation is still necessary for the continued sustained 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 continues to expect them to remain at their present levels at least through the end of 2019, and in any case for as long as necessary to ensure the continued sustained convergence of inflation to levels that are below, but close to, 2% over the medium term.

The Governing Council confirmed that the Eurosystem will continue to reinvest, in full, the principal payments from maturing securities purchased under the asset purchase programme for an extended period of time past the date when the Governing Council 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.

The Governing Council reiterated its readiness to adjust all of its instruments, as appropriate, to ensure that inflation continues to move towards the Governing Council's inflation aim in a sustained manner.

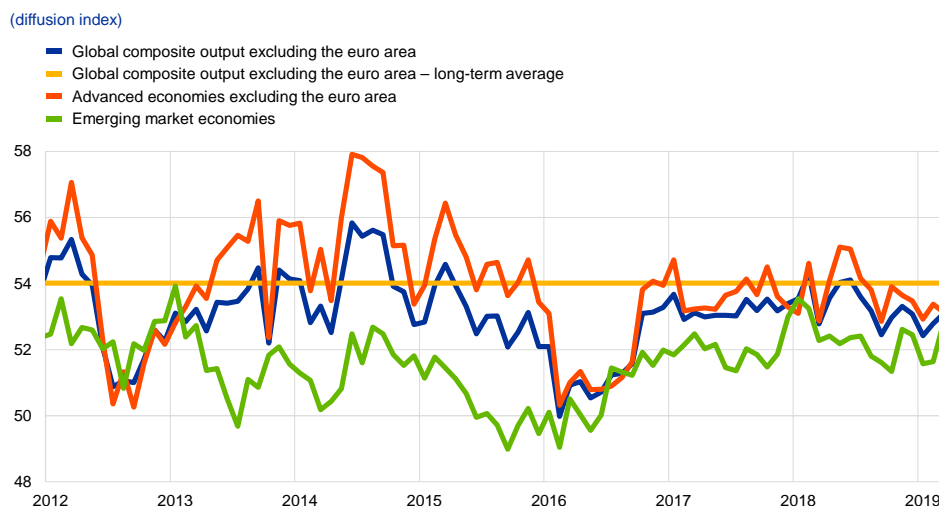
The precise terms of the new TLTRO series will be communicated at one of the Governing Council's forthcoming meetings. In particular, the pricing of the new TLTRO-III operations will take into account a thorough assessment of the bank-based transmission channel of monetary policy, as well as further developments in the economic outlook. In the context of the ECB's regular assessment, the Governing Council will also consider whether the preservation of the favourable implications of

negative interest rates for the economy requires the mitigation of their possible side effects, if any, on bank intermediation.

## 1 External environment

**Global survey indicators point to some deceleration in global activity in the first quarter of 2019.** The global composite output Purchasing Managers' Index (PMI) excluding the euro area rose in March (see Chart 1), as an increase in the services sector more than offset a marginal decline in manufacturing. In quarterly terms, however, the PMI in the first quarter of 2019 is below the level recorded in 2017 and the first half of 2018, consistent with some deceleration in the global growth momentum. Across advanced economies, the US Markit PMI was broadly unchanged while the all-industry survey indicator published by the Institute for Supply Management (ISM) declined from rather high levels during the first quarter. PMIs also decreased in the United Kingdom and Japan, on the back of weaker readings in March. In emerging market economies, the quarterly PMI picked up strongly in Brazil, while decreasing in India and Russia. The PMI remained unchanged in China in the first quarter, although it recorded a strong increase in March.

**Chart 1**  
Global composite output PMI



Sources: Haver Analytics, Markit and ECB staff calculations.

Notes: The latest observations are for March 2019. "Long-term average" refers to the period from January 1999 to March 2019.

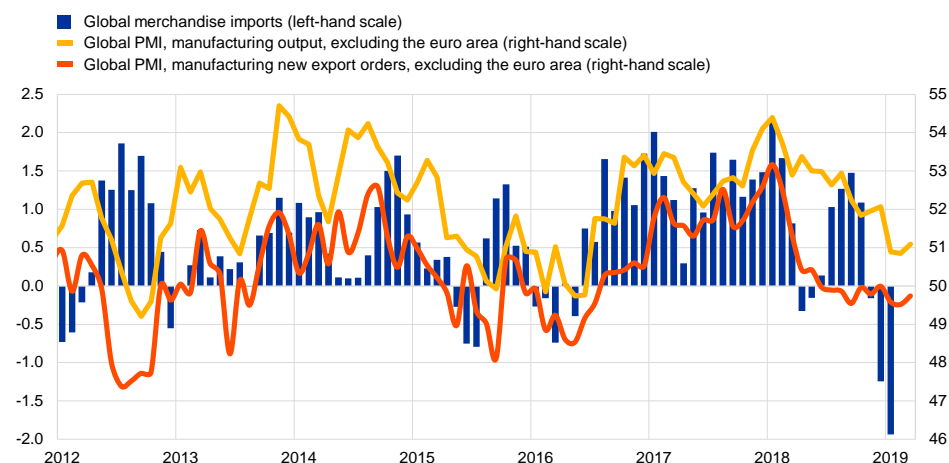
**Global trade indicators signal a continued weakness at the start of the year.** The volume of merchandise imports decreased by 1.9% in January 2019, in three-month-on-three-month terms, particularly on account of sharp declines in Asian countries. This decrease is partly related to the significant volatility of Chinese trade data around the Lunar New Year, which makes it difficult to interpret the January data. At the same time, the PMI new export orders remained below the expansionary threshold in March (see Chart 2). A broader measure, based on a principal component of leading indicators of global trade, qualifies this picture and points to a marginal increase in world trade in the first quarter of 2019, following subdued developments in the second half of last year.

**The ongoing slowdown in world trade is partly driven by the turning of the global industrial cycle.** A maturing global business cycle typically leads, via lower

investment activity, to a moderation in global trade. This pattern has been amplified at the current juncture by the fact that much of the weakness in the global economy has been concentrated in industrial activity. In fact, the industrial and trade cycles tend to be highly correlated.

**Chart 2**  
Global trade and surveys

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



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

**World trade has also been affected by other factors, including heightened trade tensions.** US imports from China have fallen particularly sharply in the industries affected by the tariffs, but a sharp moderation has also occurred across other Asian economies. While this could be a sign of weaker domestic demand in China, it could also be the result of industry-specific developments, particularly in electronic products and cars. Both sectors are highly trade-intensive and have a high share in Asian trade. Box 1 discusses the role that a maturing tech cycle may have played in the trade slowdown observed in China and other key Asian economies.

**Global inflation remained stable in February.** Annual consumer price inflation in the Organisation for Economic Co-operation and Development (OECD) countries remained unchanged in February at 2.1%, following a sequence of declines since the peak registered in October last year. Excluding food and energy prices, OECD annual inflation slowed marginally to 2.1%. Tight labour market conditions across major advanced economies have so far translated into only moderate wage increases, suggesting that the underlying inflation pressures remain subdued. Looking ahead, inflation is expected to remain subdued in the short term, while diminishing spare capacity at the global level is expected to support underlying inflation in the medium term.

**Oil prices have continued to increase since mid-March.** After the surge in mid-February, which followed the release of data showing an improvement in OPEC+ compliance with its supply-cut agreements, oil prices have risen further since early March to a level of around 70 USD/barrel. After OPEC+ reset its two-year-old agreement at the end of last year in an effort to reduce oil supply, overall production by

the cartel has decreased since January 2019. Moreover, US sanctions against Iran and Venezuela continued to affect supply, exacerbated further by power outages in Venezuela, which weighed on output. Among non-oil commodities, metal prices and food prices have remained broadly unchanged since early March.

**The expansion in the US remains sustained, but shows signs of maturing.** US real GDP expanded at an annual rate of 2.2% in the fourth quarter of 2018. The increase in real GDP in the fourth quarter mainly reflected positive contributions from private consumption and non-residential fixed investment, while the contributions from net exports and government spending were negative. While overall GDP growth remains supported by strong fundamentals, economic activity is expected to decelerate in the first quarter of this year, amid one-off adverse factors – such as the partial government shutdown – and mixed incoming data. At the same time, inflationary pressures remain contained, in spite of rising wages. Annual headline CPI inflation slowed down slightly to 1.5% in February. The decline in inflation was mainly driven by a sharp drop in energy prices. CPI inflation excluding food and energy prices dropped marginally to 2.1% in February. By contrast, in line with a tight labour market, average hourly earnings rose by 3.4% year-on-year, continuing an upward trend that started in 2015.

**Economic activity slowed in Japan in early 2019, following a rebound towards the end of last year.** Real GDP increased by 0.5%, quarter on quarter, in the fourth quarter of 2018, mainly supported by domestic demand, particularly non-residential investment. However, high frequency indicators point to a slowdown in underlying momentum at the start of the year. Industrial production was very weak, currently standing below the Q4 2018 levels. January-February average real goods exports are lower than last year, suggesting ongoing weakness in external demand. Consumer price inflation continued to slow at the start of 2019, largely reflecting developments in food and energy prices. Annual headline inflation declined to 0.2% in both January and February, reflecting mostly a decline in the energy price contribution and strong declines in fresh food prices. Core inflation (i.e. excluding food and energy) has picked up slightly to 0.3%.

**In the United Kingdom, GDP growth slowed markedly in the final quarter of 2018 in an environment of high uncertainty related to Brexit.** Quarterly real GDP growth slowed to 0.2% in the fourth quarter of last year, following robust growth in the previous quarter. Short-term indicators suggest continued subdued GDP growth in the first quarter of 2019, as elevated Brexit-related uncertainty dampens consumption and investment. Despite slowing global growth momentum, UK exports rebounded strongly in the second half of the year, aided by a slight depreciation of the pound sterling. However, net trade continues to contribute negatively to growth, as imports rebounded even more strongly – in large part as a result of stockpiling by firms and consumers in anticipation of Brexit. After a slight up-tick in the middle of 2018, annual CPI inflation has continued to decline, falling to 1.8% in the first two months of 2019. This is well below the depreciation-induced peak at 3.0% seen one year earlier and reflects both the waning impact of earlier strong rises in import prices and rapid declines in energy prices from the autumn of 2018.

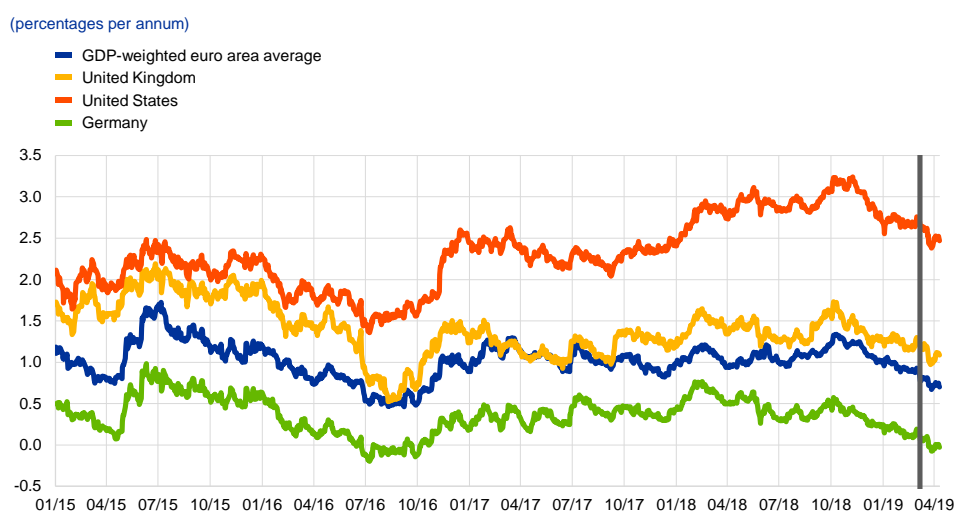


**Economic growth is stabilising in China.** Weaker activity in the manufacturing sector is partly offset by resilience in services. In the first two months of the year, industrial production softened further and fixed-asset investment growth recovered slightly, while growth in nominal retail sales remained robust. This mixed picture was confirmed by the manufacturing and services PMIs in the first quarter, with services holding up better. At the same time, trade activity has been very volatile in recent months, partly reflecting distortions related to the Lunar New Year. Following weak data for February, the authorities expect some rebound in March. Annual headline CPI inflation eased to 1.5% in February due to the sharp decline in food price contribution. Inflation excluding food and energy also slowed to 1.8%. At the same time, annual producer price inflation remained steady at 0.1% in February, as lower oil prices were offset by a price increase in the mining and quarrying sector.

## 2 Financial developments

**Long-term yields have declined in the euro area and in the United States.** During the period under review (from 7 March to 9 April 2019) the GDP-weighted euro area ten-year sovereign bond yield declined marginally to 0.72% (by around 5 basis points) in a context of decreasing global risk-free rates and stable or declining financial market volatility (see Chart 3). Ten-year sovereign bond yields fell by around 15 basis points in the United States and by slightly less than 10 basis points in the United Kingdom, to 2.50% and 1.10% 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 7 March 2019. The latest observation is for 9 April 2019.

**Developments in euro area sovereign bond spreads relative to the risk-free OIS rate showed some cross-country heterogeneity.** Spreads on Italian sovereign bonds rose by 16 basis points, to just above 2.2%, while those on Spanish bonds rose by 10 basis points, to 0.74%. German spreads rose marginally, by 2 basis points, to -0.34%, while French spreads remained unchanged at around zero. By contrast, spreads on Portuguese sovereign bonds declined by 7 basis points, to 0.86%.

**Broad indices of euro area equity prices rose amid lower risk-free rates and in an environment of broadly stable volatility.** Over the review period equity prices of euro area banks and non-financial corporations increased by 3.4% and 2.9% respectively. Despite some negative macroeconomic surprises, which led to swings in equity valuations, equity prices rose throughout the review period. This was possibly on account of the declines in risk-free rates in the context of stable and historically low expectations among market participants regarding future equity volatility. Among other factors, continued positive earnings and fewer concerns about geopolitical tensions also contributed to support equity valuations.

**Euro area corporate bond spreads narrowed somewhat over the review period.** Reflecting the abovementioned gains in equity prices, the spread on investment-grade NFC bonds relative to the risk-free rate has declined by around 10 basis points to

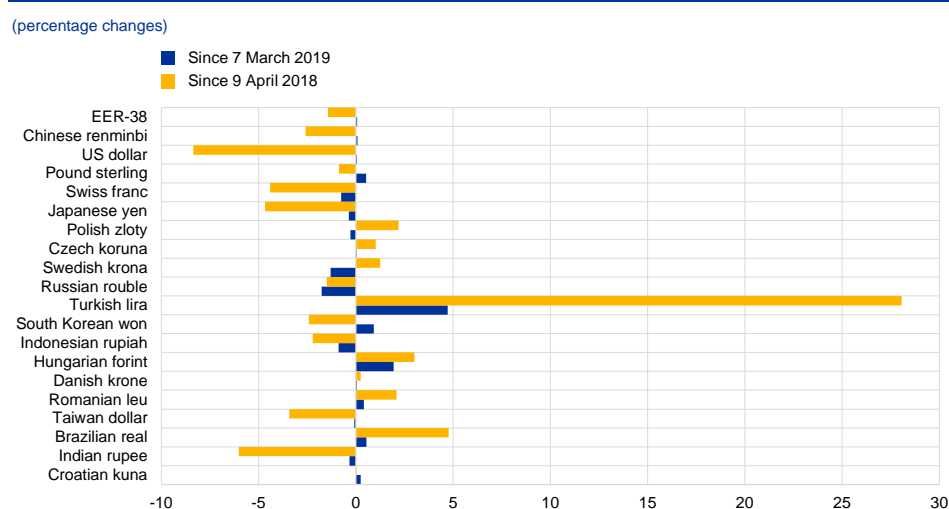
stand at 70 basis points since early March. Yields on financial sector debt have also fallen by around 12 basis points to 89 basis points. Overall, although corporate bond spreads are currently higher than the temporary lows reached in early 2018, they remain some 30 basis points below the levels observed in March 2016, prior to the announcement and subsequent launch of the corporate sector purchase programme.

**The euro overnight index average (EONIA) stood, on average, at -37 basis points over the review period.** Excess liquidity increased by approximately €6 billion to stand at around €1,904 billion.

**The EONIA forward curve shifted downwards over the review period.** The downward movement of the curve peaked at around 15 basis points for maturities close to five years. Overall, the curve remains at below zero for horizons up to the end of September 2022, reflecting market expectations of a prolonged period of negative interest rates.

**In foreign exchange markets, the euro remained broadly unchanged in trade-weighted terms (see Chart 4).** Over the review period the nominal effective exchange rate of the euro, as measured against the currencies of 38 of the euro area's most important trading partners, appreciated by 0.1%. This reflected a modest strengthening of the euro against the US dollar (by 0.1%) and the Chinese renminbi (by 0.1%), as well as a more pronounced appreciation against the pound sterling (by 0.5%) and the currencies of most other non-euro area EU Member States (with the exception of the Swedish krona and the Polish zloty). These developments were only partly offset by a depreciation of the euro against other major currencies, notably the Japanese yen (by 0.4%) and the Swiss franc (by 0.7%), as well as against the currencies of some emerging market economies.

**Chart 4**  
Changes in the exchange rate of the euro vis-à-vis selected currencies



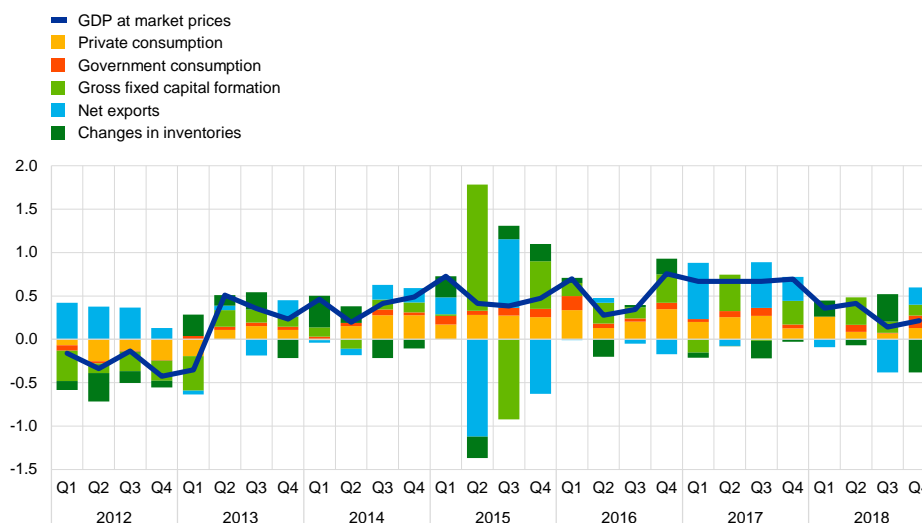
Source: ECB.  
Notes: "EER-38" is the nominal effective exchange rate of the euro against the currencies of 38 of the euro area's most important trading partners. All changes have been calculated using the foreign exchange rates prevailing on 9 April 2019.

## 3 Economic activity

**The slowdown in euro area growth has continued, as incoming data have overall been weaker than expected in the first quarter of 2019.** Real GDP increased by 0.2% in quarter-on-quarter terms in the last quarter of 2018, only marginally up compared with the previous quarter, but still below the economic expansion observed in the first half of last year (see Chart 5). Domestic demand and net trade contributed positively to GDP growth in the fourth quarter, while changes in inventories had a substantial curtailing effect. In annual terms, this resulted in a 1.8% increase in real GDP in 2018, which is well below the 2.4% rate of growth recorded in the previous year. Although soft economic indicators remain robust overall compared with historical averages, they have continued to fall short. Particular vulnerabilities in the manufacturing and tradable goods sectors reflect a downturn in external demand which, combined with some country and sector-specific factors, suggests a continued weak growth momentum in the first quarter of 2019.

**Chart 5**  
Euro area real GDP and its components

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



Source: Eurostat.

Note: The latest observations are for the fourth quarter of 2018.

**Consumer spending continued to rise, albeit at a lower growth rate than in previous years.** Private consumption rose by 0.2%, quarter on quarter, in the final quarter of 2018, following a slightly lower rate of increase in the previous quarter. The main factors behind the recent weakness in consumption have been the higher oil price in the first half of 2018, delivery bottlenecks in the car industry, increased macroeconomic uncertainty and some country-specific factors. On an annual basis, consumption rose by 1.0% in the fourth quarter of 2018, which is the same rate as in the previous quarter. Annual growth of households' real disposable income accelerated from 1.5% in the third quarter of 2018 to 1.7% in the fourth quarter. Disposable income continues to be supported mainly by steady labour income growth, reflecting the robustness of the labour market. Consequently, the saving ratio

(expressed as a four-quarter moving average) increased from 12.0% in the third quarter of 2018 to 12.1% in the fourth quarter.

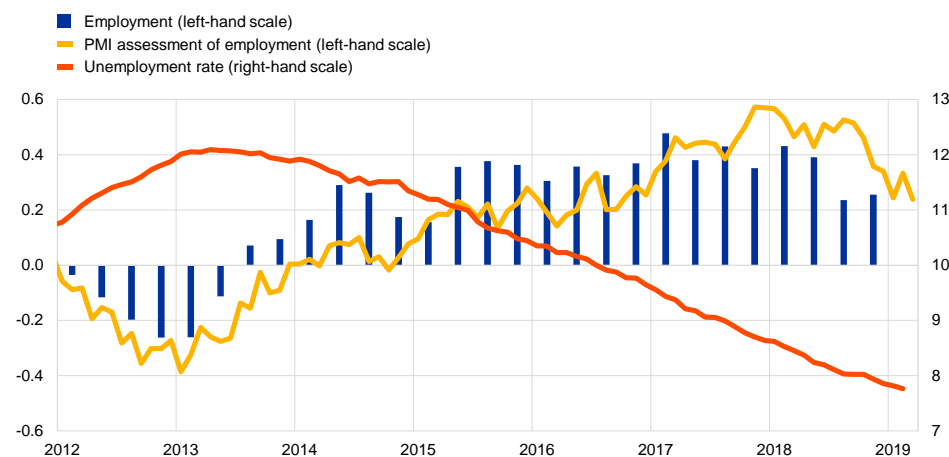
**Euro area labour markets remain robust, despite some slowdown.** Employment increased by 0.3% in the last quarter of 2018, following an increase of 0.2% in the third quarter. Overall, employment increased by 1.5% in 2018. Employment growth slowed down somewhat in the second half of 2018, but remained strong compared with developments in GDP growth. Continued employment growth combined with a drop in GDP growth in 2018 led to a moderation in productivity growth, following a modest pick-up in 2017. This may partly reflect the fact that adjustments in employment tend to lag behind changes in output. One reason for this may be that firms are cautious in their recruitment decisions, in part owing to limited flexibility regarding adjustments to longer-term employment contracts.

**Recent short-term labour market indicators continue to point to positive but moderating employment growth in the first quarter of 2019.** The euro area unemployment rate stood at 7.8% in both January and February 2019, down from 7.9% in the last quarter of 2018. This, together with the survey indicators on employment, points to further employment growth, but at a lower rate than before.

### Chart 6

#### Euro area employment, Purchasing Managers' Index assessment of employment, and the unemployment rate

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



Sources: Eurostat, Markit and ECB calculations.

Notes: The Purchasing Managers' Index (PMI) is expressed as a deviation from 50 divided by 10. The latest observations are for the fourth quarter of 2018 for employment, March 2019 for the PMI and February 2019 for the unemployment rate.

**Private consumption is expected to continue to rise at robust rates.** Recent data on retail trade and new passenger car registrations point to continued growth in consumer spending in the first quarter of this year. The latest survey results signal ongoing, albeit moderating, employment growth. This should continue to support household income and thus consumer spending. Moreover, households' net worth continued to increase in the fourth quarter of 2018, thereby providing further support to private consumption. Considered together, these factors should explain why during the first quarter of 2019 consumer confidence partly recovered from its decline over the course of 2018 and continued to stand at a level well above its long-term average.

**Business investment slowed in the fourth quarter of 2018, and short-term indicators point to a possible further slowdown in the first quarter of 2019.**

Despite remaining positive, quarter-on-quarter non-construction investment growth declined from 1.0% in the third quarter of 2018 to 0.4% in the fourth quarter of 2018. Available short-term indicators for the first quarter of 2019 also point to a weakening in growth. Compared with the fourth quarter of 2018, available data for the first quarter of 2019 suggest a fall in the production of capital goods. This also reflects the recorded decline in industrial confidence as well as higher financial volatility. On a more positive note, capacity utilisation remains high, pointing to supply-side constraints which might call for increased investment. Looking forward, investment dynamics are expected to remain moderate. As the business cycle matures, business investment is expected to decelerate in tandem with weakening external and domestic demand. In this context, the assessment of export order books and production expectations in the capital goods sector points to continued weakness so far in 2019. By contrast, while profit dynamics (i.e. internal funds for investment) slowed, banks continued to report a positive net demand for loans used for investment purposes in the first quarter of 2019.

**Euro area trade regained some momentum at the start of 2019 but according to leading indicators it may be short-lived.**

According to the latest monthly nominal data (for January 2019), intra-euro area exports recovered by 1.5%, month on month, following a decrease of 0.6% in December 2018. Extra-euro area exports expanded at a stronger rate of 0.8%, month on month, compared with 0.3% in December 2018. Growth in total imports remained weak in January 2019 at 0.3% in month-on-month terms, up from 0.1% in December 2018. Intra-euro area and extra-euro area flows advanced at the same pace. While euro area trade in goods strengthened at the start of 2019, the recovery was nevertheless insufficient to fuel stronger growth over the first quarter. Looking forward, euro area trade is expected to remain weak in the first part of 2019.

**The latest economic indicators suggest a sizeable moderation in the pace of economic expansion.**

Industrial production (excluding construction) experienced a rebound in the first quarter of 2019. Production showed positive signs for the first time since 2017, increasing slightly by 0.4% in quarter-on-quarter terms compared with the 1.2% drop in the fourth quarter of 2018. Survey data signal a slowdown in growth dynamics in the near term. The composite output Purchasing Managers' Index (PMI) averaged 51.5 in the first quarter of 2019, compared with 52.3 in the fourth quarter of 2018. Meanwhile, the European Commission's Economic Sentiment Indicator (ESI) dropped to an average of 106.0 in the first quarter of 2019, compared with 108.9 in the fourth quarter of 2018. While the ESI stood above its long-term average, the PMI remained between the threshold of 50 (which separates contraction from expansion in activity) and its historical average of 52.9.

**This moderation reflects in part a slowdown in external demand, compounded by some country and sector-specific factors.**

While the impact of some country and sector-specific idiosyncratic factors on economic activity is dissipating, global headwinds continue to weigh on euro area growth and the rebound is sluggish. Overall, growth is expected to continue at a slow pace.

**Looking forward, the ECB's monetary policy measures will continue to back domestic demand.** Private consumption is supported by healthy labour market conditions and ongoing employment gains. Residential investment should continue to improve, supported by growing household wealth. Business investment is expected to continue to expand, albeit at a subdued pace, driven by high levels of capacity utilisation and supportive financing conditions. In addition, although the outlook for global trade has weakened, the expansion in global activity is expected to continue. The results of the latest round of the [ECB Survey of Professional Forecasters](#), conducted in April 2019, show that private sector GDP growth forecasts for 2019 and 2020 were revised down by 0.3 and 0.1 percentage points respectively, compared with the previous round conducted in late January. At the same time, the figure for 2021 remained unchanged at 1.4%.

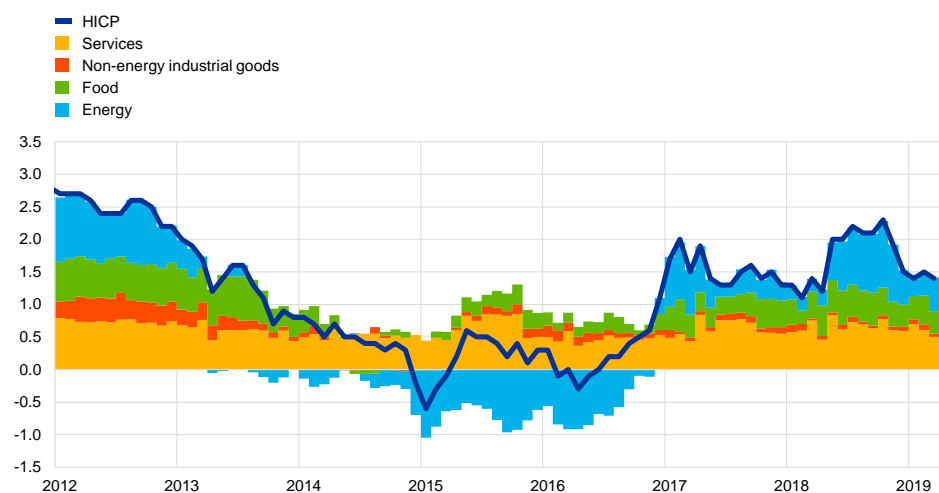
**The risks surrounding the euro area growth outlook remain tilted to the downside.** This reflects the persistence of uncertainties related to geopolitical factors, the threat of protectionism and vulnerabilities in emerging markets.

**According to Eurostat's flash estimate, euro area annual HICP inflation declined to 1.4% in March 2019, from 1.5% in February (see Chart 7).** This decline took place despite higher energy price inflation and reflected lower food price inflation and, more especially, lower HICP inflation excluding energy and food.

**Chart 7**

## 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 March 2019 (flash estimates). 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 and continued their recent sideways movement.** HICP inflation excluding energy and food declined to 0.8% in March, from 1.0% in February. The extent to which this decline was affected by developments in more volatile prices, for instance for travel and clothing, or by the timing of the Easter holidays, can be assessed only with the release of the full HICP breakdown. Other measures of underlying inflation, including the Persistent and Common Component of Inflation (PCCI) indicator and the Supercore indicator<sup>1</sup>, which are only available for the period to February, also pointed to a continuation of the broad sideways movement of recent months. Nonetheless, all of the statistical and model-based measures remained above their respective lows in 2016. Looking ahead, measures of underlying inflation are expected to increase gradually, driven by stronger wage growth and the pick-up observed in domestic producer price inflation.

**Supply chain price pressures for HICP non-energy industrial goods continued to increase.** This build-up is visible in the later stages of the supply chain, with domestic producer price inflation for non-food consumer goods increasing further to 1.1% in February, its highest rate since March 2012 and twice its historical average. Import price inflation for non-food consumer goods also continued to strengthen

<sup>1</sup> For more 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.



further in February, standing at 1.2%, up from 0.8% in January. At the very early stages of the pricing chain, price pressures recovered somewhat; the annual percentage changes in both oil and non-oil commodity prices moved back into positive territory in February and continued to increase in March.

**Recent developments in wage growth continue to support the notion of a gradual build-up in domestic cost pressures.** Annual growth in compensation per employee was 2.2% in the fourth quarter of 2018, remaining above its long-term average. The decline from 2.5% in the previous quarter was linked to one-off payments in that quarter. As negotiated wage growth had continued to increase, rising from 2.1% in the third quarter of 2018 to 2.2% in the fourth quarter, the decline in growth of compensation per employee was reflected in a declining wage drift. More generally, wage growth indicators now stand visibly higher than in the first half of 2016. These developments are in line with increasing tightness in the labour market.

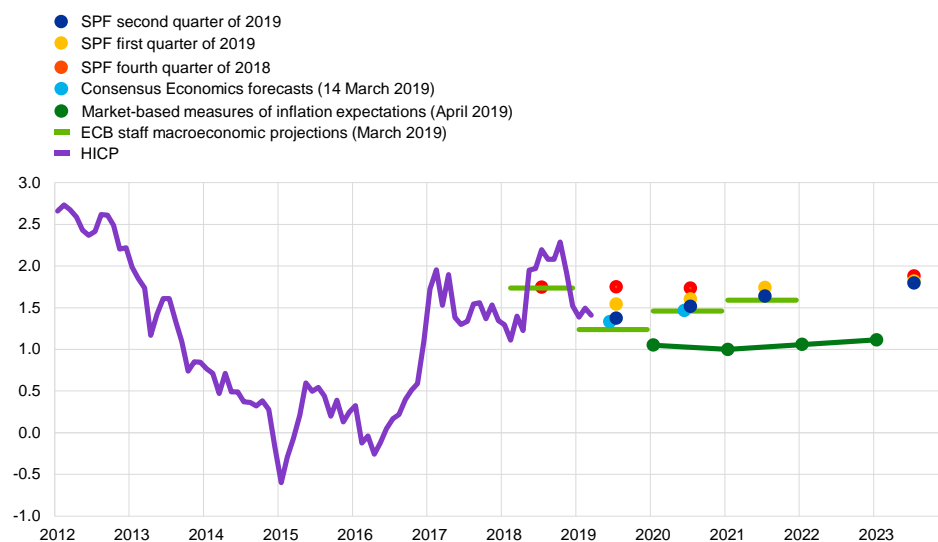
**The impact of rising labour cost pressures on overall domestic price developments was cushioned by profit margins.** Price pressures as captured in unit labour costs continued to intensify in the fourth quarter of 2018, mainly reflecting a continued weakening in labour productivity growth. Notwithstanding, the annual percentage change in the GDP deflator remained relatively stable, hovering between 1.3% and 1.5% in 2018, as the overall weakening in the cyclical momentum of the economy, together with deteriorations in the terms of trade (related particularly to the past increases in oil prices), weighed on profit margin developments.

**Market-based measures of longer-term inflation expectations declined, while survey-based expectations remained stable.** The five-year forward inflation-linked swap rate five years ahead stood at 1.36%, around 15 basis points lower than the level prevailing in early March (see Chart 8). Despite its further decline, which continues a downward trend beginning in November 2018, the risk-neutral probability of negative average inflation over the next five years, implied by inflation options markets, remains negligible. Nevertheless, the forward profile of market-based measures of inflation expectations continues to point to a prolonged period of low inflation with only a very gradual return to inflation levels below, but close to, 2%. The results of the [ECB Survey of Professional Forecasters \(SPF\) for the second quarter of 2019](#) show average headline inflation expectations for the euro area of 1.4% in 2019, 1.5% in 2020 and 1.6% in 2021. This represents downward revisions of 0.1 percentage points for each of these years compared with the previous survey, mainly attributable to a weaker growth outlook and downward surprises in recent inflation outcomes. According to the SPF, average longer-term inflation expectations remained at 1.8%.

## Chart 8

### Market and survey-based measures of inflation expectations

(annual percentage changes)



Sources: ECB Survey of Professional Forecasters (SPF), ECB staff macroeconomic projections for the euro area and Consensus Economics.

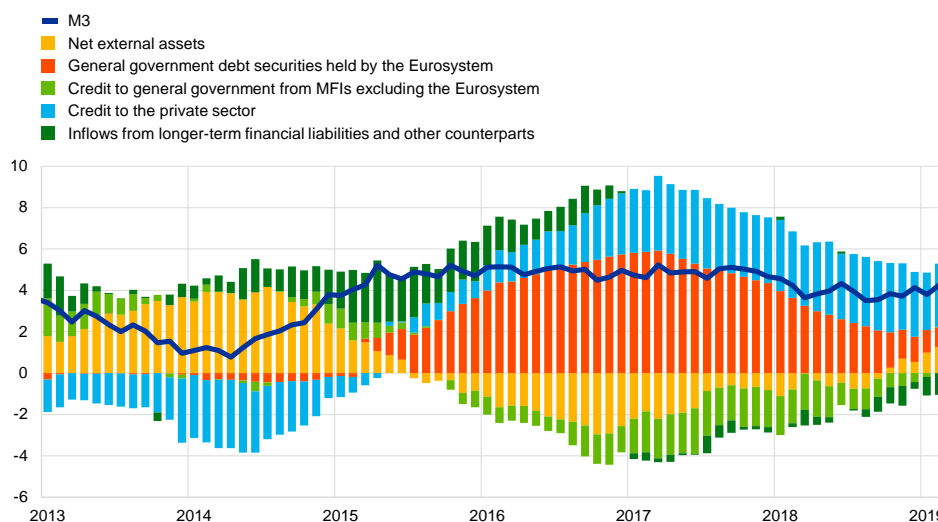
Notes: The SPF survey for the second quarter of 2019 was conducted between 18 and 22 March 2019. The market-implied curve is based on the one-year spot inflation rate and the one-year forward rate one year ahead, the one-year forward rate two years ahead, the one-year forward rate three years ahead and the one-year forward rate four years ahead. The latest observations for market-implied inflation are for 9 April 2019.

## 5 Money and credit

**Broad money growth rebounded in February.** The annual growth rate of M3 increased to 4.3% in February from 3.8% in January, thereby continuing to hover around the rates observed since early 2018 (see Chart 9). The phasing-out of net asset purchases at the end of 2018 has led to a smaller positive impact of the asset purchase programme (APP) on M3 growth. The annual growth rate of M1, the main contributor to M3 growth from a component perspective, increased to 6.6% in February (up from 6.2% in January). Given that real M1 growth tends to lead real GDP growth by about one year (see Box 4 “The predictive power of real M1 for real economic activity in the euro area”), these developments are consistent with the current moderation in real economic activity. Looking ahead, the current level of real M1 growth indicates a low probability of a recession in the euro area in the coming year.

**Chart 9**  
M3 and its counterparts

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



Source: ECB.

Notes: Credit to the private sector includes 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 February 2019.

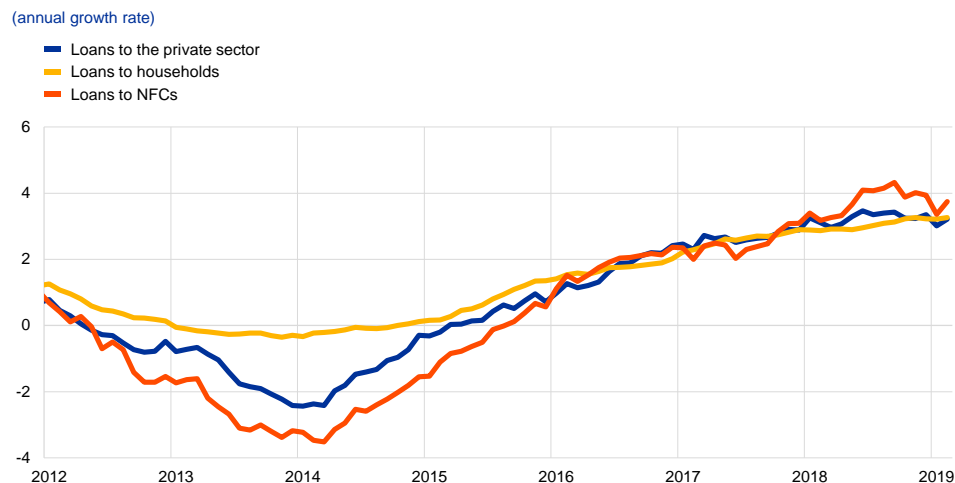
### **M3 growth remained resilient to the fading-out of the contribution of the APP.**

From a counterpart perspective, the positive contribution to M3 growth from general government securities held by the Eurosystem decreased further (see the red bars in Chart 9) in the context of the aforementioned phasing-out of net purchases under the APP. Until October 2018 it had been largely offset by an increase in the contribution from credit to the private sector (see the blue bars in Chart 9). While credit to the private sector has remained the largest driver of broad money growth in recent months, its contribution has stagnated. Since October 2018 an increasingly positive contribution from net external assets (see the yellow bars in Chart 9) – which, among other things, reflects a reduced preference on the part of euro area investors for foreign assets – and a declining drag from credit to the government from euro area monetary financial institutions (MFIs) excluding the Eurosystem (see the light green

bars in Chart 9) have contributed to the resilience of M3 growth. At the same time, increasing issuance activity of MFI longer-term debt securities has somewhat dampened money creation (see the dark green bars in Chart 9).

**Following a decrease in January, the annual growth of loans to the private sector increased again in February.** The annual growth rate of MFI loans to the private sector (adjusted for loan sales, securitisation and notional cash pooling) increased to 3.2% in February from 3.0% in January (see Chart 10). This was due to a rebound in the annual growth rate of loans to NFCs, which increased to 3.7% in February from 3.4% in January, mainly reflecting a base effect. Looking beyond short-term volatility, the annual growth rate of loans to NFCs has been on a moderating path in recent months, in line with the typical lagged reaction to the slowdown in economic activity observed since early 2018. At the same time, the annual growth rate of loans to households remained stable at 3.3% in February. The expansion in loan growth has been supported by the significant decline in bank lending rates across the euro area since mid-2014 (notably owing to the ECB's non-standard monetary policy measures) and by overall improvements in the supply of, and demand for, bank loans. In addition, banks have made progress in consolidating their balance sheets, although the volume of non-performing loans (NPLs) remains high in some countries and may constrain financial intermediation.<sup>2</sup>

**Chart 10**  
Loans to the private sector



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

**According to the April 2019 euro area bank lending survey, loan growth continued to be supported by favourable overall bank lending conditions and increasing demand for housing loans.** In the first quarter of 2019 credit standards for loans to enterprises remained broadly unchanged, which was somewhat more favourable than expected by banks in the previous survey round. At the same time, credit standards for households tightened. Banks' cost of funds and balance sheet constraints contributed to a tightening of credit standards across all loan categories,

<sup>2</sup> See also Chapter 3 of the "Financial Stability Review", ECB, November 2018.

while competitive pressures continued to contribute to an easing of credit standards. Net demand for loans to enterprises remained stable in the first quarter of 2019, after having increased since the second quarter of 2015, and was mainly supported by the low general level of interest rates. At the same time, net demand for housing loans continued to increase in the first quarter of 2019, also driven mainly by the low general level of interest rates. Euro area banks again confirmed that the ECB's asset purchase programme had a positive impact on their liquidity position and market financing conditions and a negative impact on their profitability over the past six months, which included the Eurosystem's net asset purchases until December 2018. The APP had an easing impact on banks' credit terms and conditions and a positive impact on their lending volumes. In addition, while the ECB's negative deposit facility rate (DFR) had an adverse impact on banks' net interest income, it continued to support lending.

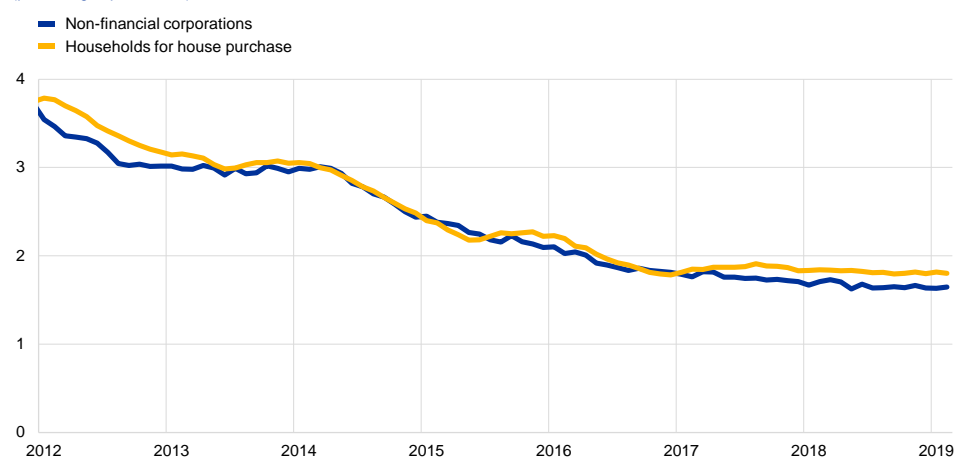
### **Very favourable lending rates continued to support euro area economic growth.**

In February 2019 the composite bank lending rate for loans to NFCs remained broadly stable at 1.65%, which is close to its historical low in May 2018. The composite bank lending rate for housing loans remained stable in February at 1.80%, also close to its historical low in December 2016 (see Chart 11). Composite bank lending rates for loans to NFCs and households have fallen significantly and by more than market reference rates since the ECB's credit easing measures were announced in June 2014. The reduction in bank lending rates for loans to NFCs, as well as for loans to small firms (assuming that very small loans of up to €0.25 million are primarily granted to small firms), was particularly significant in those euro area countries that were most exposed to the financial crisis. This indicates a more uniform transmission of monetary policy to bank lending rates across euro area countries and firm sizes.

**Chart 11**

Composite bank lending rates for NFCs and households

(percentages per annum)



Source: ECB.

Notes: Composite bank lending rates are calculated by aggregating short and long-term rates using a 24-month moving average of new business volumes. The latest observation is for February 2019.

### **In January 2019 net issuance of debt securities by euro area NFCs recovered part of the decline that occurred during the last quarter of 2018.**

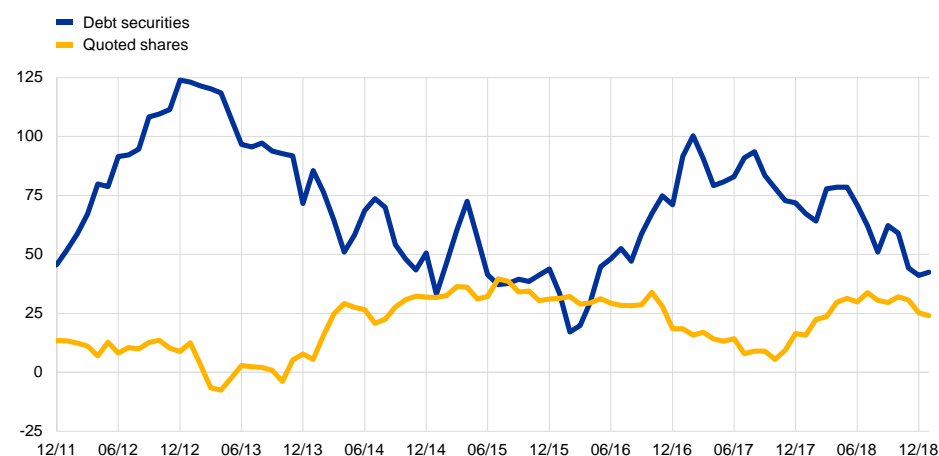
The latest ECB data indicate that, on a net basis, the total flow of debt securities issued by NFCs in

January 2019 turned positive again after being negative in the last two months of 2018. This is in line with the seasonal patterns observed over the last few years, in which issuance at the beginning of the year has tended to rebound following a period of weakness in the last few months of the previous year. From a more medium-term perspective (see Chart 12), the annual flows of debt securities were slightly above €40 billion in January 2019, close to the level at which the annual flows of debt securities seem to have settled since November 2018. Available market data suggest that net flows of debt securities issued continued to be relatively strong in February but moderated in March 2019, albeit remaining positive. In January 2019 total net issuance of quoted shares by NFCs continued the decline from its recent peak in the summer of 2018. Nevertheless, the annual flows of net issuance of quoted shares remained high and close to the levels recorded in 2014.

### Chart 12

#### Net issuance of debt securities and quoted shares by euro area NFCs

(annual flows in EUR billions)



Source: ECB.

Notes: Monthly figures based on a 12-month rolling period. The latest observation is for January 2019.

**Financing costs for euro area NFCs declined marginally in January 2019 from the level recorded at the end of the previous year.** The overall nominal cost of external financing for NFCs, comprising bank lending, debt issuance in the market and equity finance, declined to 4.7% in January and is projected to have declined significantly further in February and March 2019. The cost of financing in March 2019 is estimated to be only 16 basis points above the historical low of December 2014 and much below the levels observed in the summer of 2014. The estimated decrease in the cost of financing since the end of the fourth quarter of 2018 reflects a decrease in both the cost of equity and the cost of market-based debt. The decline in both measures is mainly accounted for by the decline in the long-term risk-free rate and, to a somewhat lesser extent, by the decline in risk premia.

# Boxes

## 1 What the maturing tech cycle signals for the global economy

Prepared by Marcel Tirpák

**A maturing tech cycle has been one of the factors behind the significant trade slowdown in China at the turn of the year.** The tech cycle argument rests on the fact that China and other key Asian economies, including Japan, are closely integrated through supply chains concentrated, especially, in the production of computers and other electronic devices – the tech sector<sup>3</sup>. The maturing tech cycle may reflect a number of factors: it could be associated with more structural sector-specific drivers, such as the possibility of an increasing level of saturation in the global market for smartphones and for new data centres; it could relate to mini-cycles linked to the launch of new models of tech products; or it may signal, more generally, a turn in the global business cycle. This box reviews basic characteristics of the Asian tech sector and shows that it has played an important role in the recent weakness in China's trade. At the same time, the box also suggests that the trend in the global tech cycle associated with weaker trade in Asia may be bottoming out.

**Weak merchandise imports from other key Asian economies have accounted for a substantial share of decelerating Chinese imports in recent months (see Chart A).** Imports from the United States have also declined, partly as retaliatory tariffs on soybeans have diverted Chinese demand for soybeans to Brazil. At the same time, China has significantly increased imports of various commodities, including crude oil.

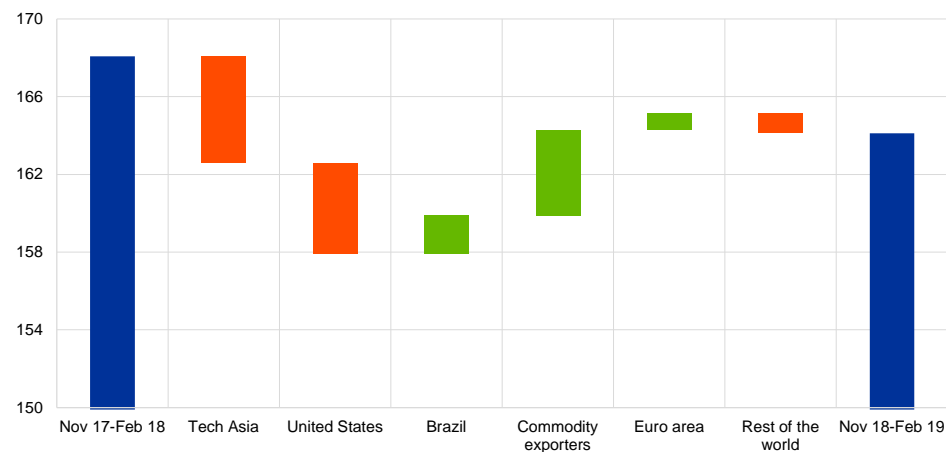
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<sup>3</sup> For the purposes of this box, “tech sector” is used to refer to the manufacturing of computers, electronic and electrical equipment.

## Chart A

### Chinese imports by exporting country and regions

(USD billions)



Sources: China Customs via Haver Analytics and ECB calculations.

Notes: Total Chinese nominal imports are represented by the blue bars and exporting countries and regions by the red and green bars. Chinese imports from the respective countries and regions from the first period to the second period are represented by the red (lower) and green (higher) bars. "Tech Asia" denotes Japan, Korea, Malaysia, Singapore, Taiwan, Thailand and Vietnam. "Commodity exporters" includes all commodity-exporting emerging market economies, as well as Australia, Canada, New Zealand and Norway.

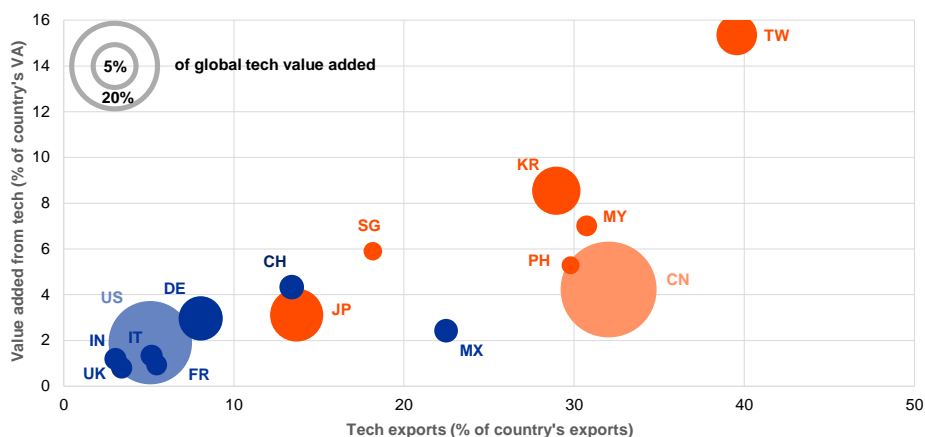
**China and other Asian economies are specialised in tech sector production and satisfy around half of global demand for tech products.** China alone accounts for more than a quarter of the sector's global value added. The structure of Asian economies, with a notable exception of India, which specialises in IT services, is skewed towards tech production. This sector accounts, on average, for around 7% of total value added in the region. A high degree of specialisation in tech production is even more pronounced when looking at exports, where tech products account, on average, for more than a quarter of exported goods from the region (see Chart B). Asia dominates the tech sector also from a global perspective: it accounts for around half of the sector's global value added and for more than two-thirds of global tech exports. Asian tech exports account for 10% of total global trade.



## Chart B

### Specialisation in the tech sector is common across Asian economies

(percentages; index: 2015)



Sources: OECD and ECB calculations.

Notes: "Tech sector" refers to "Computers, electronic and electrical equipment" (D26T27) in the OECD's Trade in Value Added database. The size of the bubbles on the graph refers to the relative share of a country's tech value added in global tech value added. Asian countries are shown in red.

### The Asian tech supply chain connects advanced economies and emerging markets, with China the largest producer of final products.

Japan and Korea are positioned upstream in the supply chain and, together with Taiwan, specialise in the production of semiconductors and chips. China remains the key assembler of final products in spite of a significant decline in import intensity. The import content of its tech production, which is subsequently exported, declined to 27% in 2015 from 40% only a decade ago, pointing to its declining dependence on intermediate goods sourced from the region. A country's relative position in the supply chain determines whether domestic macroeconomic developments could provide useful signals also for global trends.

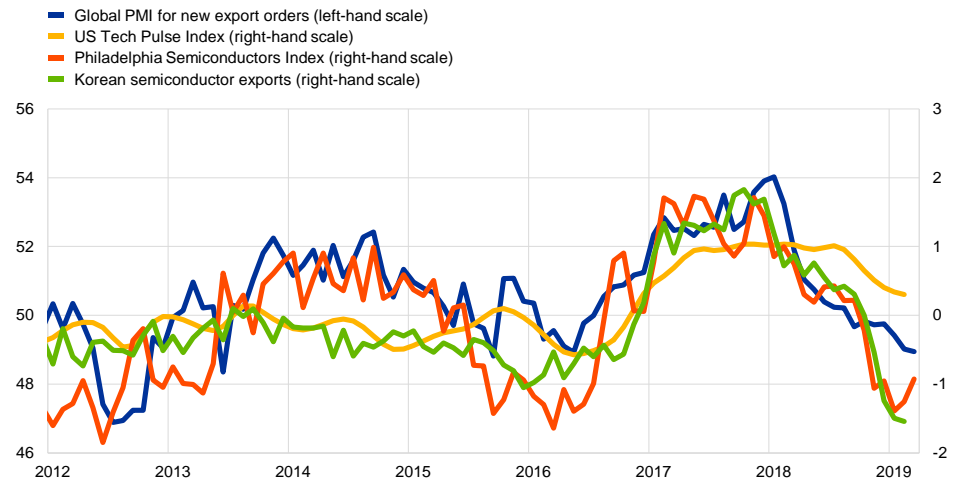
### While the global tech cycle turned in early 2018, an orderly slowdown followed by some stabilisation seems the most likely scenario looking ahead.

Recent indicators of the tech cycle point to a slowdown in the global tech cycle (see Chart C). However, there are some signs that suggest a stabilisation in the period ahead. First, financial market expectations for sectoral developments in the region – approximated by the Philadelphia Semiconductors Index (see Chart C, red line) – point towards some bottoming out this year, after falling in 2018. Second, while the global PMI for new export orders in the manufacturing sector has remained below the expansion-contraction threshold of 50, the pace of its decline in recent months has been significantly less steep than in the first half of 2018. Although it covers a broader set of exported products, it also shows a fairly high correlation with sectoral stock prices and thus could provide some further evidence of stabilisation in the global tech sector. And third, Korean exports of semiconductors – often used as another leading indicator of activity in the tech sector – have recently shown signs of stabilisation. Broader indices of activity in the technology sector, which are published with a somewhat longer lag and include the US Tech Pulse Index, and global trade in electronic components also suggests some limited weakening in the sector's growth momentum. Overall, therefore, the turning of the global tech cycle seems partly to

reflect a rather exceptionally strong period in 2017, related to substantial investment in expanding capacities of data centres globally. Despite a high degree of uncertainty, a soft landing currently seems a more likely scenario.

### Chart C Tracking the global “tech cycle”

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



Sources: Markit, Thomson Financial Datastream, FRED, KITA and ECB staff calculations.

Notes: The annual percentage changes for the US Tech Pulse Index, the Philadelphia Semiconductor Index and Korean semiconductor exports are mean-variance adjusted. The latest observations are for March 2019 (PMI, Philadelphia Semiconductor Index) and February 2019 (US Tech Pulse Index, Korean semiconductor exports).

## 2 Emerging market currencies: the role of global risk, the US dollar and domestic forces

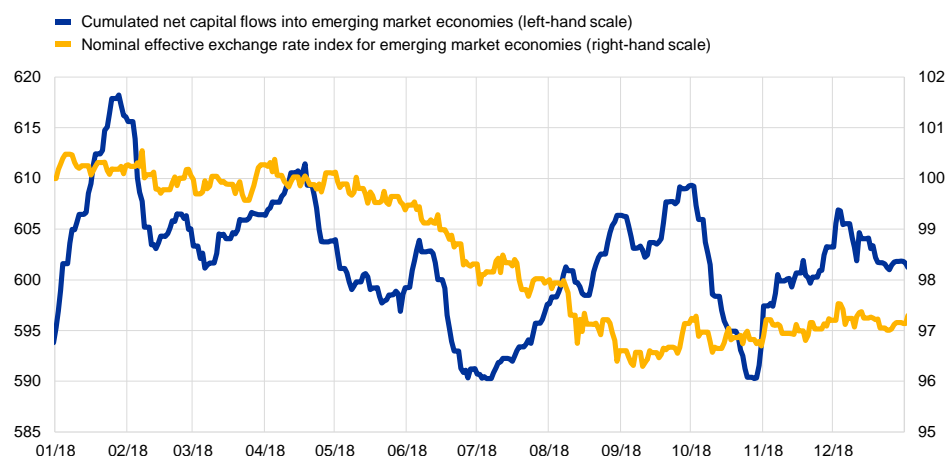
Prepared by Massimo Ferrari

**Exchange rate movements against the US dollar are an important factor shaping the outlook in emerging market economies as a large share of their credit, trade and debt is priced in dollars.** Abrupt swings in emerging market exchange rates are typically linked to capital outflows, tighter financing conditions and heightened financial instability. The drivers of those movements are, however, difficult to disentangle, as global and domestic forces jointly determine the relative strengths of these currencies. This box presents a methodology for separating out the four main drivers of emerging market exchange rate swings: spillovers from US shocks, global risk appetite, interest rate effects and idiosyncratic domestic shocks. It uses the methodology to analyse the factors behind the sharp depreciation and subsequent recovery of emerging market currencies over the course of 2018.

### Chart A

#### Evolution of emerging market economies' net capital inflows and exchange rates

(left-hand scale: USD billions; right-hand scale: index: 1 January 2018 = 100)



Sources: ECB, Institute of International Finance, JP Morgan and ECB calculations.

Notes: The emerging market exchange rate index is the JP Morgan nominal effective exchange rate for emerging markets, which is a weighted average of emerging markets exchange rates. The latest observation is for 31 December 2018.

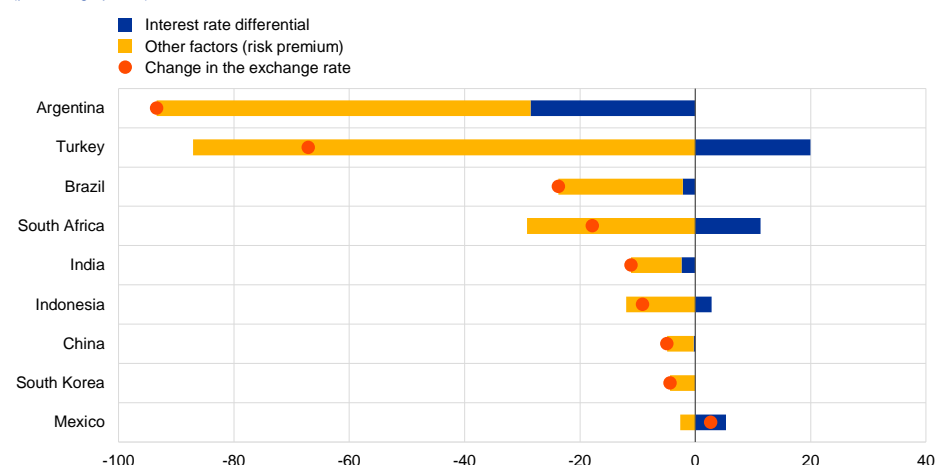
**Between January and August 2018 emerging market currencies depreciated markedly.** Emerging market currencies experienced a sharp sell-off over the first eight months of 2018 coupled with capital outflows and rising financial market volatility (see Chart A). The composite index of the nominal effective exchange rates of emerging market currencies fell by 3.6% between January and August of that year, while bilateral exchange rates against the US dollar reacted much more strongly, weakening in some cases by more than 20%. The abrupt financial market swings in some countries have posed a threat to financial stability, with potential spillovers to advanced economies. Large currency depreciations also increase funding costs for emerging market economies, whose financial systems typically raise liquidity in US dollars, lowering economic growth prospects.

**Interest rate differentials alone do not explain exchange rate movements.** The theoretical concept of uncovered interest rate parity postulates that interest rate differentials determine exchange rate movements. It states that developments in the difference in interest rates between two countries should determine the change in the bilateral exchange rate, with the high-yielding currency depreciating vis-à-vis the low-yielding currency. In practice, however, a large part of exchange rate movements is not explained by interest rate differentials and is often attributed to changes in the risk premium.<sup>4</sup> The risk premium correlates with various economic forces which are not well captured by short-term interest rate differentials, including, for example, measures of investors' risk appetite or market volatility. Interest rate differentials indeed explain very little of the changes in emerging market exchange rates against the US dollar in 2018 (see Chart B).

### Chart B

#### Contribution of interest rate differentials and other factors to exchange rate movements against the US dollar

(percentage points)



Sources: Haver Analytics, Board of Governors of the Federal Reserve System, Global Financial Data and ECB calculations.

Notes: The blue bars show contributions of interest rate differentials to the change in the bilateral exchange rates against the US dollar (expressed as US dollars per unit of local currency) from January to August 2018. Contributions are computed from a regression of daily changes in the bilateral exchange rate on interest rate differentials between the country in question and the United States. The interest rate used is the short-term money market rate. The component "other factors" is the residual of this regression. The latest observation is for 31 August 2018.

**A better understanding of the drivers of currency movements is provided by a model which augments the standard interest rate regression with measures of global risk appetite and US factors.** Beyond interest rates, there are two main forces behind emerging market currency movements: changes in global risk appetite and the spillovers from developments in the United States. Global risk appetite affects currencies because a higher risk appetite among market participants tends to lead to inflows of capital into emerging markets, which results in an appreciation of their exchange rates. The unique position of the US dollar in the international monetary system also plays an important role. When the US dollar is strong, which happens in periods of positive economic growth momentum and high interest rates in the US

<sup>4</sup> See for example Fama, E.F., "Forward and spot exchange rates", *Journal of Monetary Economics*, Vol. 14, No 3, 1984, pp. 319-338; Evans, M., "Exchange-Rate Dark matter", *Working Papers*, Georgetown University, 2012; or Engel, C., Nelson, M. and West, K., "Factor Model Forecasts of Exchange Rates", *Econometric Reviews*, Vol. 34(1-2), 2015, pp. 32-55.

economy, capital tends to flow from emerging markets to the United States, and emerging market currencies depreciate. This is a channel through which US shocks spread to emerging market economies.

**Verdelhan (2018)<sup>5</sup> provides a simple framework to assess the relative significance of each of the two forces for movements in emerging market currencies.<sup>6</sup>** The standard model in which exchange rate changes are related to interest rate differentials is augmented by two components. One, which can be called a “dollar factor”, aims to identify the effect of developments in the United States on emerging market currencies. It is added by inserting a component into the regression which measures the average change in emerging market exchange rates against the US dollar. Since a purely US-based shock might be expected to have a similar effect on all US dollar bilateral exchange rates, looking at changes that are common to a number of such exchange rates should reveal shocks that are specific to the US dollar.<sup>7</sup> The second component accounts for risk-driven movements in emerging market currencies which do not stem directly from US shocks and is generally labelled in the literature as the “carry factor”. It is defined as the difference between exchange rate changes of high-yielding currencies and those of low-yielding currencies. When investors engage in carry trades – i.e. sell assets in low-yielding currencies to buy assets in high-yielding currencies – they become exposed to global risks through the exchange rate. This is because high-interest rate currencies tend to depreciate during periods of economic downturn or adverse risk sentiment. Therefore, when global risk rises, the difference in exchange rate returns between the two portfolios widens, mechanically making this component highly correlated with global risk. Adding these two variables to the baseline model significantly increases the share of variation in emerging market currencies that can be explained.<sup>8</sup> The residual element that is not explained by these global or US factors reflects country-specific developments. It may include developments not entirely captured by short-term money market rates such as domestic political instability, changes in expectations of the future path of the domestic economy or market sentiment towards the currency.

**This model suggests that the sell-off during the first eight months of 2018 was mainly driven by spillovers from the United States and rising global risk aversion (see Chart C).** In the period to August 2018, the decomposition highlights two main forces behind the depreciation of emerging market currencies against the US dollar: spillovers from US shocks and global risk. This is in line with the tightening of financial conditions in emerging markets and rising US yields observed over the same period. Notable outliers are Turkey and Argentina, where domestic political tensions are likely to have been the main drivers of exchange rate developments. The model also shows that domestic monetary policies – aimed at increasing interest rate

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<sup>5</sup> Verdelhan, A., “The Share of Systemic Variation in Bilateral Exchange Rates”, *Journal of Finance*, Vol. 73, No 1, 2018.

<sup>6</sup> This model is design to analyse floating currencies of countries with free capital mobility. Clearly, if the exchange rate is controlled (for example it is pegged to the US dollar), its variations cannot be explained directly by macroeconomic developments.

<sup>7</sup> A simple average of bilateral exchange rates is preferred to the US dollar nominal effective exchange rate because the latter could be driven by shocks to the bilateral exchange rates of large trading partners of the United States.

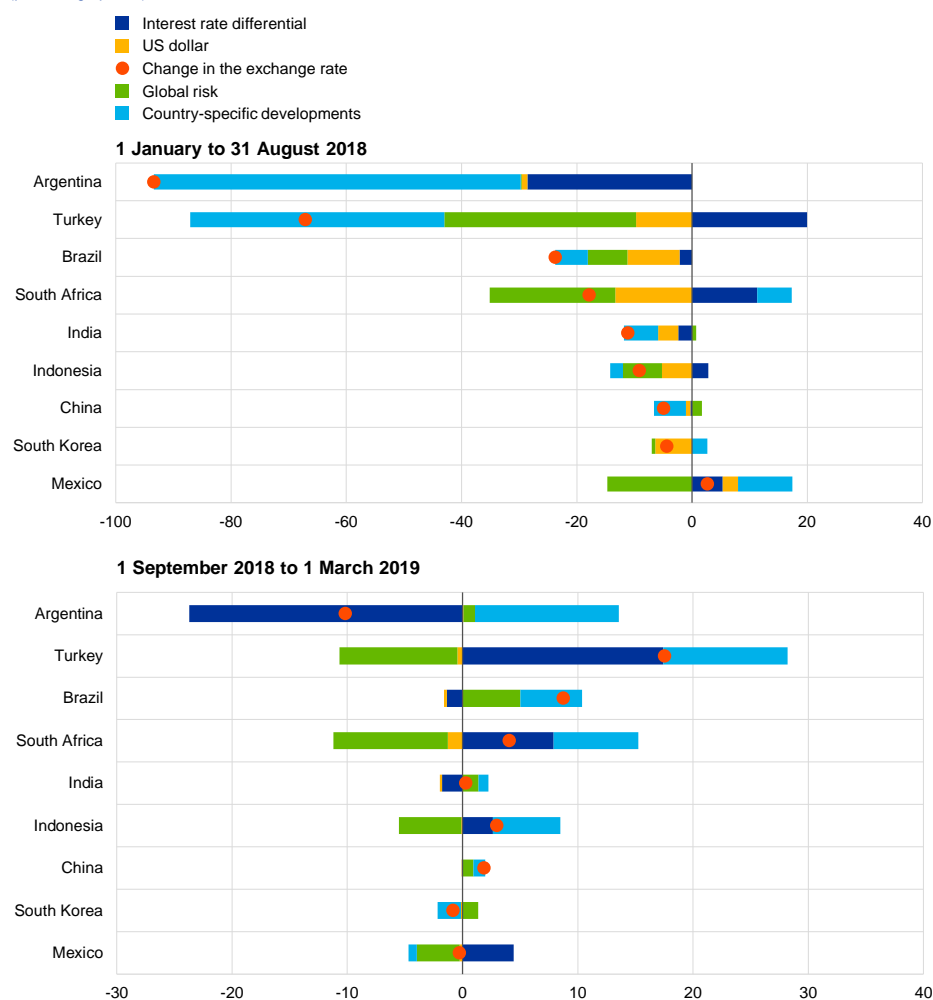
<sup>8</sup> The additional regressors increase the in-sample fit of the model from 0.02% to 27% over the entire sample and to almost 40% for advanced economies.

differentials vis-à-vis the United States – were largely unable to cushion the effects of the global and US factors driving currencies downwards.

### Chart C

#### Contributions to the depreciation and recovery of emerging market currencies against the US dollar

(percentage points)



Sources: Haver Analytics, Board of Governors of the Federal Reserve System, Global Financial Data and ECB calculations.  
 Notes: The bars show contributions to variance based on a regression of changes in the exchange rates against the US dollar (expressed as US dollars per unit of local currency) on interest rate differentials, the dollar factor and the carry factor at daily frequency. The interest rate used is the short-term money market rate. The latest observation is for 1 March 2019

**The subsequent recovery, on the other hand, appears to have been driven mainly by domestic policy reactions in emerging market countries and positive idiosyncratic developments (see Chart C).** The decomposition shows that global risk has continued to put downward pressure on emerging market currencies. However, the role of the US dollar factor has been more limited since August 2018, suggesting that developments in the United States have not generated additional spillovers to emerging market currencies since then. On the other hand, country-specific factors have tended to bolster emerging market currencies, suggesting that domestic conditions have become somewhat more positive and

growth prospects have improved in emerging economies since the financial market turmoil during the summer of 2018.

### 3 Exploring the factors behind the 2018 widening in euro area corporate bond spreads

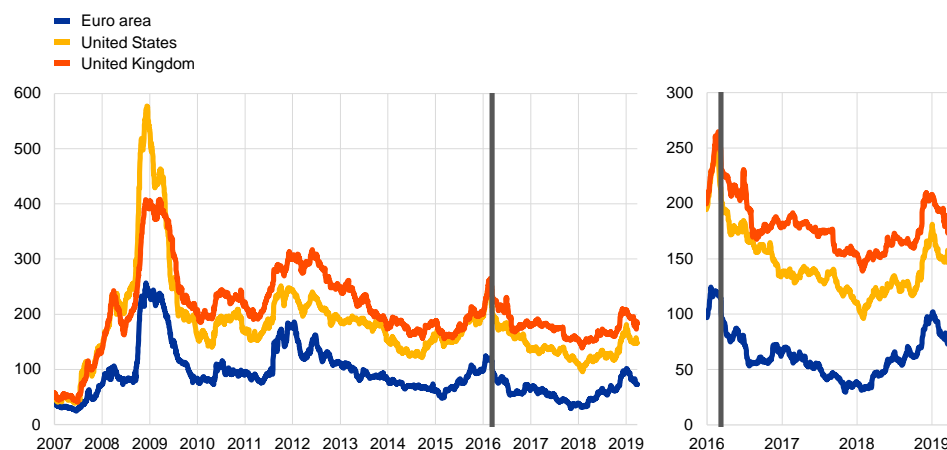
Prepared by Lena Boneva, Gregory Kidd and Ine Van Robays

**Global corporate bond spreads trended upwards over the course of 2018.** Euro area investment grade non-financial corporate (NFC) bond spreads increased by around 60 basis points and peaked at just above 1%, close to the levels which had prevailed prior to the announcement of the ECB's corporate sector purchase programme (CSPP) in March 2016 (see Chart A). Spreads on non-investment grade NFC debt widened more significantly, by around 200 basis points, and peaked at around 4%. The trend increase in euro area NFC bond spreads mirrored developments in global corporate bond markets; in the United States and the United Kingdom, spreads increased by around 80 and 60 basis points over the same time frame and peaked at 1.80% and 2.10%, respectively. Since the turn of the year, global NFC bond spreads have reversed a large part of the 2018 increase but nevertheless remain at elevated levels relative to those which prevailed in 2017. Furthermore, the largely synchronised movement in global spreads over this time frame alludes to a role for a common global factor, rather than a euro area-specific driver.

#### Chart A

##### Global investment grade NFC bond spreads

(basis points)



Sources: Thomson Reuters and ECB calculations.

Notes: The indices include only senior unsecured bonds. The vertical line marks the announcement of the CSPP on 10 March 2016. The United States (United Kingdom) indices refer to companies which issue in US dollars (pound sterling) and are not strictly limited to companies domiciled in the United States (United Kingdom).  
Last observation: 29 March 2019.

**Changes in underlying credit risk fundamentals are unable to explain most of the increase in euro area corporate spreads over 2018.** A model decomposition of NFC spreads into credit risk fundamentals and a residual component, the excess bond premia (EBP), identifies the EBP as the most prominent driver over 2018 (see Chart B).<sup>9</sup> The residual EBP component captures the drivers of credit spreads which are not

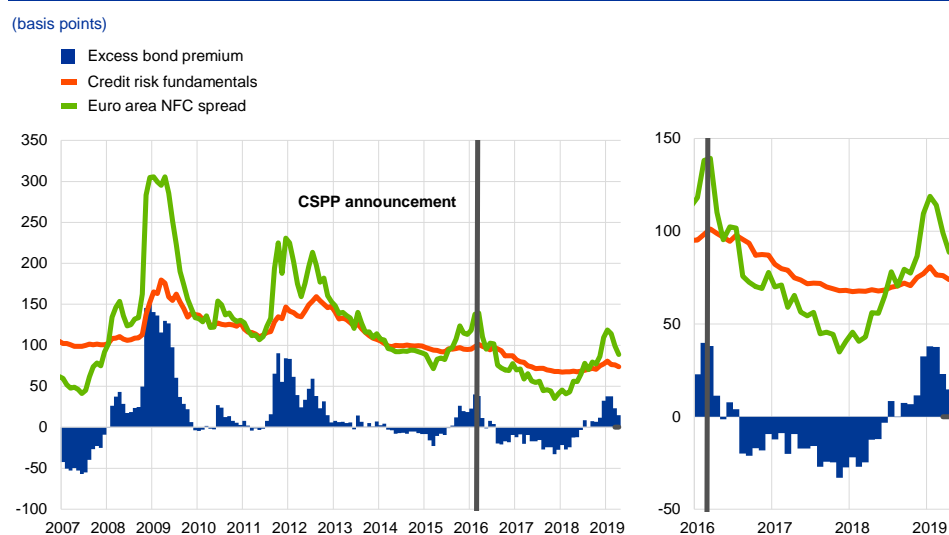
<sup>9</sup> Specifically, the model assumes that (the log of) the credit spread for a particular bond is linearly related to: (i) credit risk measured by the sum of credit ratings and expected default frequencies; (ii) other risk factors measured by the sum of coupon, duration and face value; and (iii) a residual component.



related to credit risk fundamentals, measured in the model through expected default frequencies and changes in credit ratings. Thus, by implication, the recent slowdown in euro area macroeconomic growth is yet to translate into credit rating downgrades or a rise in expected corporate defaults.

### Chart B

#### Decomposition of euro area NFC spreads into credit risk fundamentals and excess bond premia



Sources: Thomson Reuters, BofAML and ECB calculations.

Notes: The excess bond premium is the deviation of corporate bond spreads relative to the credit risk of the issuer. De Santis R.A., "Unobservable country bond premia and fragmentation", *Journal of International Money and Finance*, Vol. 82, Issue C, 2018, pp. 1-25. Last observation: March 2019.

#### Further analysis suggests that spillovers from the United States and increased global risk aversion were the main contributors to the widening in spreads, with a more limited role being played by the deterioration in the euro area macroeconomic outlook.

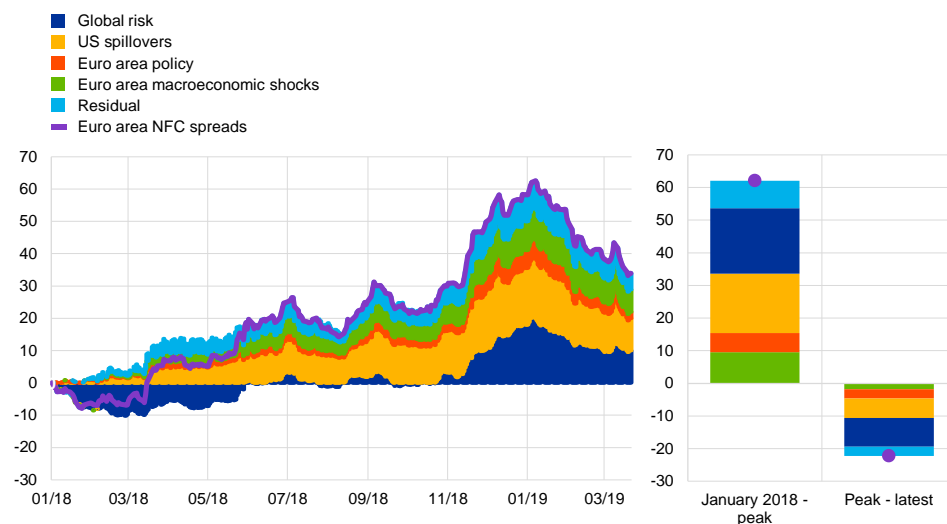
A Bayesian vector autoregressive (BVAR) model is estimated, which incorporates sign restrictions on cross-asset price movements in the United States and euro area variables to identify euro area macroeconomic and monetary shocks, as well as shocks originating in the United States and a global risk factor (see Chart C).<sup>10</sup> All identified shocks are found to have exerted upward pressure on euro area NFC spreads over the course of 2018. Moreover, the two key factors that account for most of the spread widening appear to be spillovers from the United States and the related global risk factor. The deterioration in the euro area macroeconomic outlook likewise provided some upward impetus, but to a more limited extent.

<sup>10</sup> The model is estimated using the BEAR toolbox, Alistair Dieppe, Björn van Rye and Romain Legrand, "BEAR toolbox", *Working Paper Series*, No 1934, ECB, Frankfurt am Main, July 2016.

## Chart C

### Model-based decomposition of euro area corporate bond spreads since January 2018

(basis points)



Sources: iBoxx and ECB calculations.

Notes: Peak refers to the 4 January 2019. The structural shocks are identified using sign restrictions on cross-asset price movements in a Bayesian VAR model containing euro area risk-free long-term bond yields (10y), euro area and US stock prices, the USD/EUR, the spread between euro area and US long-term risk-free yields (10y) and investment grade euro area NFC spreads. The model is estimated using daily data over the period since July 2006.

Last observation: 21 March 2019.

**The global risk factor is dominant in explaining widening NFCs spreads over the fourth quarter of 2018.** Other risk asset markets also declined over this period, as shown by a significant fall in NFC equity prices. One dividend discount model suggests that the decline in equity prices was not primarily driven by downward revisions to analysts' expectations regarding future corporate profitability, but by an increase in equity risk premia. Thus the increase in the global risk component was likely related to a broader deterioration in risk sentiment across risk asset markets. The source of this was most likely a rise in macroeconomic and political uncertainty, primarily in relation to global trade disputes. Since the turn of the year, the global risk factor has again been prominent in driving the moderation of spreads, reflecting a broad-based return of risk to a swathe of risk asset markets, including credit and equity markets. This was spurred by dissipation in perceived risks, supported by the communication by the Federal Open Market Committee at its January meeting that it would be patient with future adjustments to its policy rate.

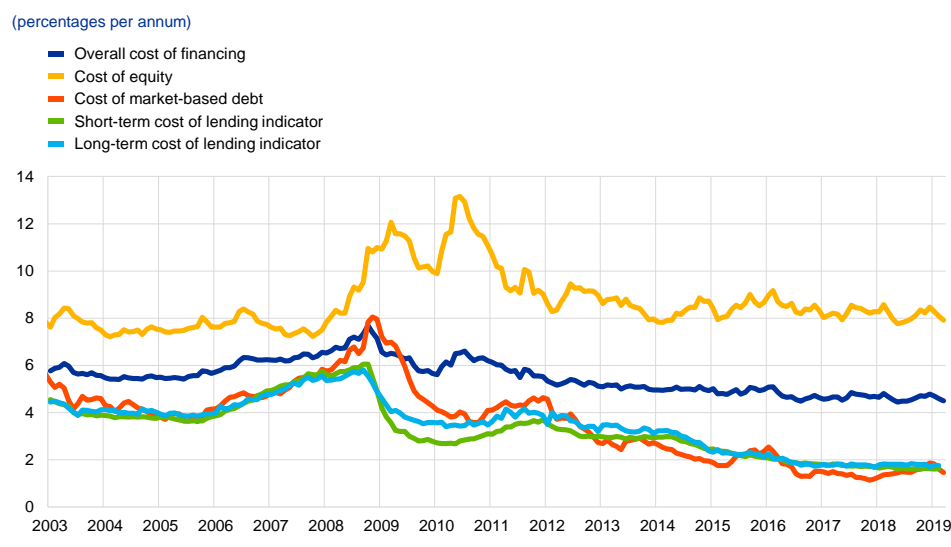
**The contribution of euro area monetary policy to the widening of corporate spreads is limited.** The BVAR model suggests that only 5 basis points of the total 60 basis points of widening in corporate bond spreads can be attributed to euro area monetary policy. This conclusion is also supported by other evidence. Throughout 2018, spreads in both CSPP eligible and ineligible bonds increased by a similar magnitude. This stands in contrast to developments following the announcement of the CSPP in March 2016, at which point spreads in eligible bonds fell to a greater extent than those of ineligible bonds.<sup>11</sup> Furthermore, NFC spreads did not discernibly

<sup>11</sup> "The impact of the corporate sector purchase programme on corporate bond markets and the financing of euro area non-financial corporations", Roberto A. De Santis, André Geis, Aiste Juskaite and Lia Vaz Cruz, *Economic Bulletin, Issue 3*, ECB, Frankfurt am Main, 2018.

react to ECB policy announcements over this period. Finally, anecdotal evidence from market counterparties suggests that the end of Eurosystem asset purchases was widely anticipated and was only a background theme throughout 2018, rather than a prominent driver.

**Regardless of the increase in NFC spreads since January 2018, broader financing conditions still remain very favourable.** Market-based debt financing only represents a small share of broader NFC financing. Since the cost of other sources of financing has remained more stable, this implies that the increase in the weighted average cost of financing for NFCs has remained contained overall (see Chart D).<sup>12</sup> In addition, supply conditions in primary corporate bond markets remain healthier, in terms of issuance volume, than in the years prior to the launch of the CSPP.

**Chart D**  
External financing conditions of euro area NFCs



Sources: Thomson Reuters, Merrill Lynch, and ECB calculations.  
Notes: Observation for March 2019 for the overall cost of financing is a nowcast, assuming that bank lending rates remain unchanged at their February 2019 levels.  
Last observation: March 2019.

<sup>12</sup> The debt securities market accounts for less than 20% of NFCs' outstanding debt and around 10% of their external financing volume.

## 4 The predictive power of real M1 for real economic activity in the euro area

Prepared by Alberto Musso

**Real M1 growth in the euro area has been moderating in recent quarters, adding to concerns about the economic outlook given the robust relationship between the business cycle and narrow money.**

This box shows that the leading and pro-cyclical properties of real M1 for real GDP remain a robust stylised fact in the euro area. Moreover, there are indications that these properties reflect the predictive capacity of narrow money, beyond the influence of interest rates. At the current juncture, models exploiting the predictive power of real M1 suggest that the steady decline in real M1 growth from its most recent peak in mid-2017 points to very low risks of recession in the euro area up to the beginning of 2020.

**The leading and pro-cyclical properties of real M1 with respect to real GDP in the euro area remain a robust stylised fact.**

These properties, which can be found for the relationship between real narrow money and real economic activity in both levels and growth rates, have been documented in various publications for earlier time periods.<sup>13</sup> An illustration of such properties can be derived from a visual examination of monthly data from January 1970 to February 2019 for annual growth in real M1, which is defined as the nominal narrow money aggregate M1 deflated by the HICP. Specifically, it is notable that this growth rate went well into negative territory for prolonged periods just before (or in coincidence with) all historical euro area recessions, as dated by the CEPR Euro Area Business Cycle Dating Committee (see Chart A).

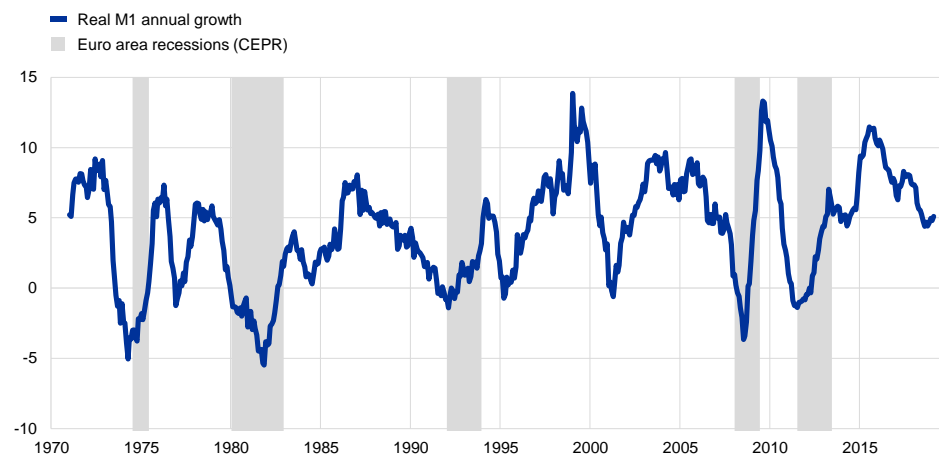
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<sup>13</sup> See for example Brand, C., Reimers, H.-E. and Seitz, F., “Forecasting real GDP: what role for narrow money?”, *Background studies for the ECB's evaluation of its monetary policy strategy*, ECB, 2003, pp. 302-333; the box entitled “The informational content of real M1 growth for real GDP growth in the euro area”, *Monthly Bulletin*, ECB, October 2008; and the box entitled “Stylised facts of money and credit over the business cycle”, *Monthly Bulletin*, ECB, October 2013.

## Chart A

### Real M1 annual growth and euro area recessions

(annual percentage changes)



Sources: CEPR, ECB.

Notes: Real M1 obtained by deflating nominal M1 with the HICP. Shaded areas delimit recessions as identified by the CEPR Euro Area Business Cycle Dating Committee.

Last observation: February 2019.

**In terms of turning points in the levels of real M1 and real GDP, statistical indicators suggest that the lead and pro-cyclicality of peaks and troughs in real M1 in relation to peaks and troughs in real GDP represent a historical regularity.**

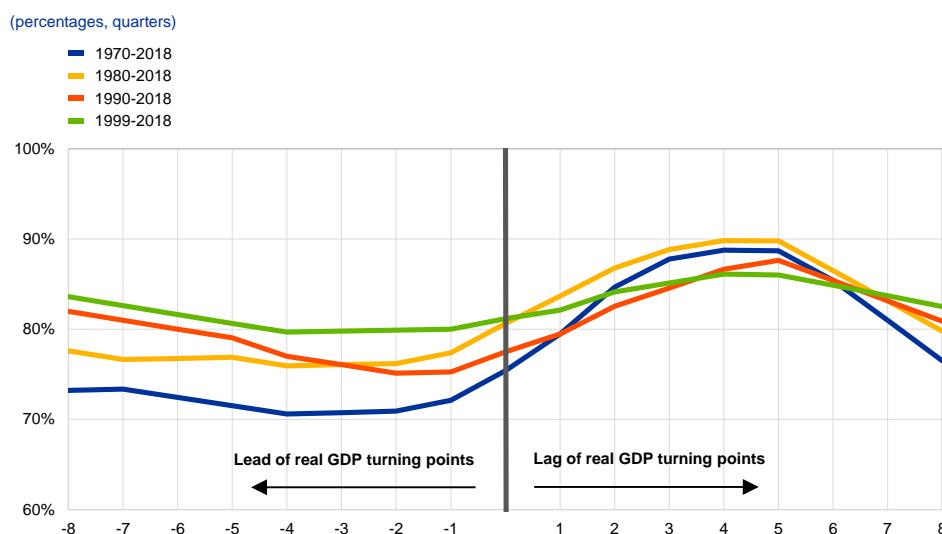
Indeed, concordance indices<sup>14</sup> calculated at different leads and lags indicate that turning points in real M1 tend to lead turning points in real GDP by four quarters, on average, and that, with that lead for narrow money, real M1 and real GDP are estimated to spend almost 90% of the time in the same business cycle phase (see Chart B). Moreover, the strong degree of synchronisation between turning points appears to have remained stable since the 1970s, including over more recent sub-periods.<sup>15</sup>

<sup>14</sup> Concordance indices, proposed by Harding, D. and Pagan, A. "Dissecting the cycle: a methodological investigation", *Journal of Monetary Economics*, Vol 49, No 2, 2002, pp. 365-381, capture the percentage of time during which two binary time series (derived on the basis of a turning point identification algorithm such as the standard Bry-Boschan algorithm for classical cycles) are in the same phase.

<sup>15</sup> Note that since the most recent turning points (troughs) for real GDP and real M1 are located in the first quarter of 2013 and the second quarter of 2011, respectively, these concordance indices are identical if data from 2014 onwards are excluded. At the same time, results are very similar if only data up to 2006, i.e. covering the pre-crisis period, are used.

## Chart B

### Concordance indices between real GDP and real M1 at different leads and lags



Sources: CEPR, ECB.

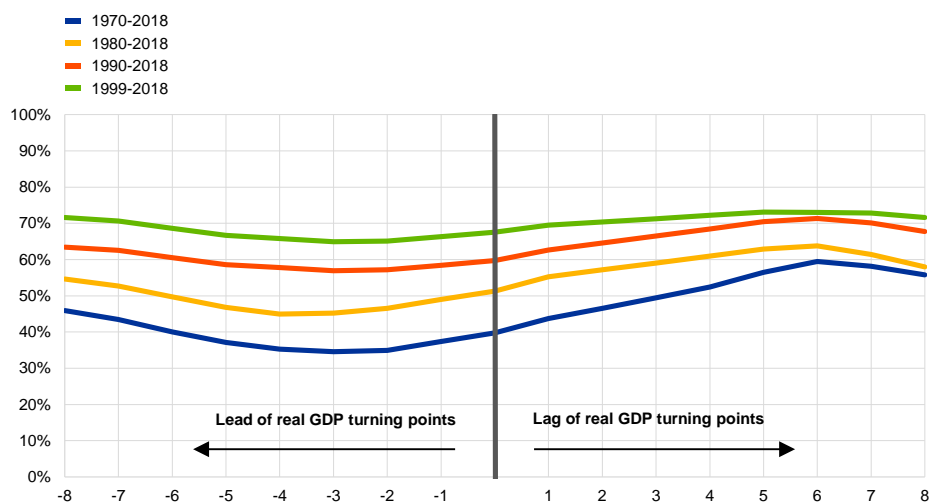
Notes: Concordance indices at different leads and lags computed between binary series associated with expansions and recessions in real GDP and real M1 levels, derived from a quarterly data version of the standard Bry-Boschan classical cycle turning point algorithm. The horizontal axis reports the number of quarters at which real GDP turning points are shifted forward (positive values) or back (negative numbers) relative to turning points in real M1. Based on quarterly data up to the fourth quarter of 2018 and starting in the first quarters of 1970, 1980, 1990 and 1999, respectively.

**Empirical evidence suggests that the predictive power of real M1 for real output in the euro area is not simply a reflection of information contained in the yield curve.** Against the background of the ample evidence pointing to the leading properties of the slope of the yield curve for predicting recessions, it is natural to ask to what extent the leading and pro-cyclical properties of real M1 are driven by the pattern of the yield curve – and to what extent controlling for yield curve constellations would obviate narrow money as a predictor for economic activity. Historical data for the euro area suggests that the slope of the yield curve exhibits a positive co-movement with respect to real M1, with a lead of two quarters. In line with this historical regularity, concordance indices at different leads and lags indicate that turning points in the slope of the yield curve tend to lead turning points in real GDP by six quarters, on average, and that, with that lead, the slope of the yield curve and real GDP are estimated to spend about 60% of the time in the same business cycle phase (see Chart C). This regularity reflects the fact that interest rates do indeed represent key variables in driving portfolio decisions by households and non-financial corporations. However, it does not necessarily imply that the predictive power of real M1 for real economic activity in general, and for recession risks in particular, is entirely driven by its relation to the yield curve. In fact, the concordance indices with respect to real GDP point to a stronger degree of co-movement with real M1 (with a one-year lead, as depicted in Chart B) than with the slope of the yield curve (with a one-and-a-half-year lead, as depicted in Chart C). Moreover, the relationship between real M1 and real GDP as measured by these indices appears more stable over sub-periods than that between the slope of the yield curve and real GDP.

## Chart C

### Concordance indices between real GDP and the slope of the yield curve at different leads and lags

(percentages, quarters)



Sources: CEPR, ECB.

Notes: Concordance indices at different leads and lags computed between binary series associated with expansions and recessions in real GDP levels and the slope of the yield curve, derived from a quarterly data version of the standard Bry-Boschan classical cycle turning point algorithm. The horizontal axis reports the number of quarters at which real GDP turning points are shifted forward (positive values) or back (negative numbers) relative to turning points in the slope of the yield curve. Based on quarterly data up to the fourth quarter of 2018 and starting in the first quarters of 1970, 1980, 1990 and 1999, respectively.

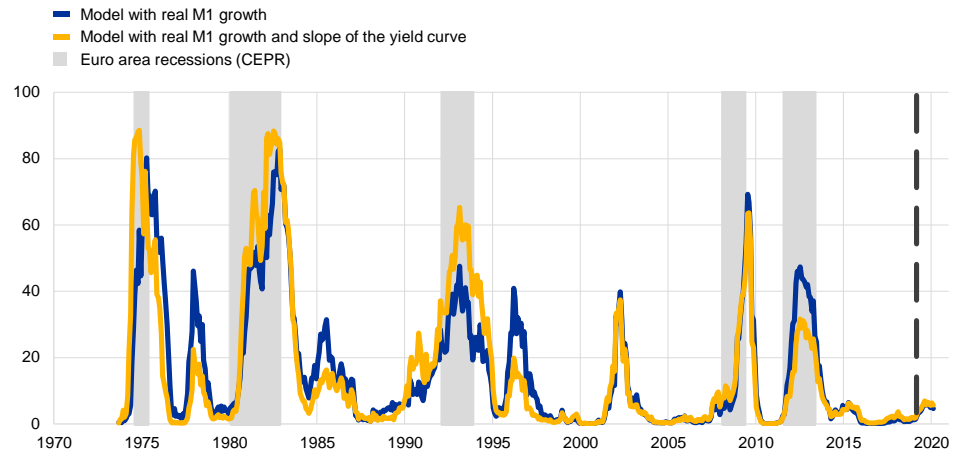
**Turning to the current juncture, a formal econometric analysis based on probit models exploiting the predictive power of real M1 does not point to significant recessionary risks in the euro area for 2019 and early 2020.** On the basis of data since 1970, the probability of a contraction in euro area real GDP derived from a probit model based on real M1 (lagged by 12 months) increased sharply before all previous euro area recessions (see Chart D), providing strong evidence of the usefulness of narrow money in predicting recessions in the euro area. Forecasts based on this model point to recession risks increasing slightly in 2019, from about 1% in January 2019 to between 5% and 7% in the second half of 2019 before falling to below 5% in February 2020, that is to say remaining very low (blue line). Controlling for the slope of the yield curve changes results only marginally (yellow line). Overall, the current level of real M1 growth is still comfortably above the zone that would be associated with risks of a recession in the near future.<sup>16</sup>

<sup>16</sup> Note that, while the most recent peak in real M1 annual growth in mid-2017 may have, to some extent, been influenced by special factors, including cash pooling effects and the Eurosystem's asset purchase programme, what matters for the assessment of the recessionary risks are turning points in the level of real M1 rather than those in the annual growth of real M1. Since real M1 annual growth was 5.1% in February 2019, it is far from diving into negative territory.

### Chart D

#### Euro area recession probabilities based on probit models with lagged real M1

(percentages)



Sources: CEPR, ECB.

Notes: Probit models estimated using monthly data up to February 2019, with the vertical dashed line marking the start of forecasts for the period from March 2019 to February 2020. Shaded areas delimit recessions as identified by the CEPR Euro Area Business Cycle Dating Committee.



# Articles

## 1 The economic implications of rising protectionism: a euro area and global perspective

Prepared by Vanessa Gunnella and Lucia Quaglietti

The risk of a trade war came sharply into focus in 2018, as protectionist threats by the US Administration and its trading partners were followed by concrete actions. Tensions rose over the summer and, while these have been defused on some fronts, the risk of further escalation remains material. The impact of the measures implemented so far on the global and euro area economic outlooks is expected to remain contained. However, large negative effects could materialise if trade tensions were to escalate further. Uncertainty related to protectionism is weighing on economic sentiment and it may raise further, potentially eroding confidence and affecting the euro area and the global economy more significantly. The complexity of intertwined international production chains could also magnify the impact. Against this backdrop, this article reviews the changes in the trade policy landscape over the past decade. It discusses the macroeconomic implications of the recent surge in protectionism and evaluates the possible effects that an escalation in trade tensions could have on the global economy and the euro area.

### 1 Introduction

**Trade integration has slowed over the last decade.** The process of trade integration started after the Second World War. It gained new impetus in the 1980s and had a golden age in the period 1990-2008, when total trade in goods and services increased from 39% to 61% of world GDP. Since then, trade has slowed (to its current 58% of world GDP), while protectionism has been on the rise, driven by an increase in non-tariff and, more recently, tariff barriers. At the same time, public support for globalisation has declined on both sides of the Atlantic. While factors such as Brexit and Euroscepticism have challenged the principles of freedom of movement and economic integration in Europe, the benefits of free trade have been openly called into question in the United States. Trade tensions escalated in 2018 and, as protectionist threats by the US Administration and retaliatory responses by its main trading partners were followed by concrete actions, the risk of a trade war came sharply into focus.

**Rising protectionism could harm trade and activity.** There is widespread consensus among economists on both the overall net benefits of trade openness and the need to cushion the negative impact it has had on certain groups in society. However, raising trade barriers is not the solution to the latter. Reversing trade integration may put at risk the net economic gains that it generated. By unravelling the long-term benefits of closer trade and investment links, retreating into protectionism also has the potential to unsettle global financial markets.

**Against this backdrop, the article discusses the macroeconomic implications of rising protectionism and evaluates its effects on the global economy and the euro area.** Section 2 puts the recent surge in trade tensions into context, discussing how the trade policy landscape has changed over the past decade. Section 3 reviews the measures announced by the US Administration in 2018 and the retaliation that ensued. Section 4 discusses the short and long-term macroeconomic implications of rising protectionism from a theoretical and model-based perspective. It also investigates whether the tariff measures implemented in 2018 may have already contributed to the progressive deterioration in global and euro area activity and trade in recent months, including via uncertainty effects. Section 5 concludes.

## 2 A changing trade policy landscape

**The trade policy landscape has undergone a significant transformation over the last decade.** The drive towards economic integration that characterised previous decades has now faded, which is evident in the slow pace of trade growth in recent years. Having expanded at approximately twice the rate of global GDP in the years leading up to the global financial crisis, the ratio of average imports to GDP growth – or the income elasticity of trade – has fallen to around 1 since 2011.<sup>17</sup> By 2016 there was a growing consensus that lower trade growth had become a permanent feature of the world economy. For example, ECB analysis<sup>18</sup> concluded that global trade was unlikely to revert to its pre-crisis trend and that post-2011 developments constitute a “new normal”.

**Several reasons have been identified that explain the recent decline in trade activity, including compositional effects and structural factors.** Analysis by the ECB and the International Monetary Fund (IMF)<sup>19</sup> suggests that geographical shifts in economic activity and changes in the composition of aggregate demand (e.g. to services, which are less trade intensive, although they are becoming increasingly more so) may have been weighing on the sensitivity of trade to economic activity. Specifically, it is found that around half of the slowdown in trade elasticity between the periods 1995-2007 and 2012-16 was due to compositional factors, namely the growing weight in the world economy of emerging market countries, which typically have a lower trade intensity than advanced economies. Moreover, countries such as China have progressively moved from being assemblers of foreign inputs to relying

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<sup>17</sup> In countries that are not financially globalised, investment must be funded by domestic savings. In countries that are financially globalised, investment can also be funded through borrowing from abroad, hence domestic investment and domestic savings are not as closely correlated. The correlation between domestic savings and investment across OECD countries bounced back to almost 70% in 2017, from less than 50% between 2000 and 2006 – a further sign that the process of de-globalisation might have become entrenched.

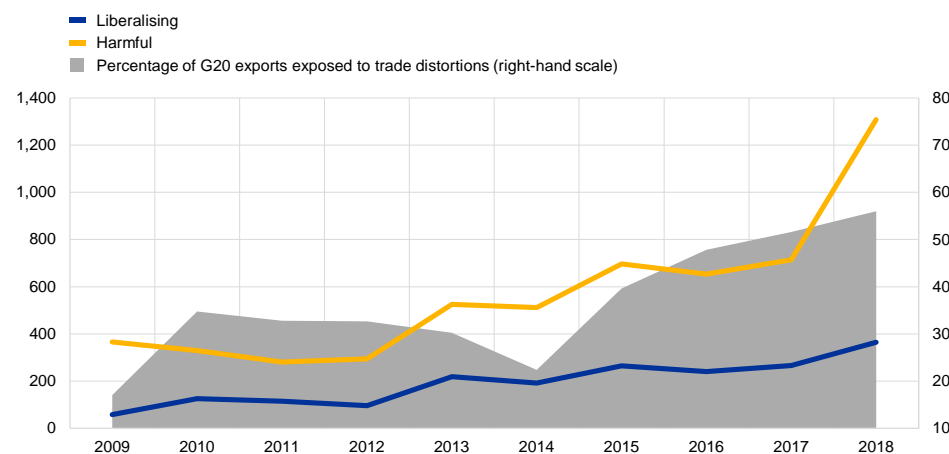
<sup>18</sup> See “Understanding the weakness in global trade: what is the new normal?”, *Occasional Paper Series*, No 178, ECB, September 2016. See also Constantinescu, C., Mattoo, A. and Ruta, M., “The Global Trade Slowdown: Cyclical or Structural?”, *IMF Working Papers*, No 15/6, International Monetary Fund, Washington, DC, 2015; and Haugh, D. et al., “Cardiac Arrest or Dizzy Spell: Why is World Trade So Weak and What can Policy Do About It?”, *OECD Economic Policy Papers*, No 18, OECD Publishing, Paris, 2016.

<sup>19</sup> See *World Economic Outlook*, IMF, October 2016.

increasingly on domestic inputs. Other studies<sup>20</sup> suggest that further structural developments might have contributed to the decline in trade elasticity – these include waning growth in global value chains (GVCs), the relocation of production closer to final markets and the declining marginal impact of financial deepening.<sup>21</sup>

**Chart 1**  
New trade measures announced

(left-hand scale: number; right-hand scale: percentages)



Source: Global Trade Alert database.

Notes: Data have been adjusted for reporting lags. The cut-off date for each year is 31 December.

**Steadily rising protectionism may well be an additional factor driving the decline in trade activity.** From the end of the Second World War, tariffs followed a downward trend that levelled off in both advanced and emerging market economies during the first part of the 21st century, before starting on an upward trajectory in recent months.<sup>22</sup> At the same time, the use of regulatory measures and non-tariff barriers such as export subsidies, restrictions on licensing or foreign direct investment, and domestic clauses in public procurement, has increased, leading to an overall surge in trade distortions.<sup>23</sup> According to data from the [Global Trade Alert database](#) encompassing traditional and non-traditional trade measures, the number of new discriminatory actions announced by G20 economies has risen steadily since 2012 and surged further in 2018 (see Chart 1). Anti-dumping measures<sup>24</sup> and import tariffs were the two most widely used instruments, together accounting for around 30% of all

<sup>20</sup> See Constantinescu, C., Mattoo, A. and Ruta, M., “The Global Trade Slowdown: Cyclical or Structural?”, *The World Bank Economic Review*, The World Bank, May 2018; and ECB Working Group on Global Value Chains, “The impact of global value chains on the euro area economy”, *Occasional Paper Series*, (forthcoming).

<sup>21</sup> See Gächter, M. and Gkrintzalis, I., “The finance-trade nexus revisited: Is the global trade slowdown also a financial story?”, *Economics Letters*, Elsevier, Vol. 158(C), September 2017, pp. 21-25.

<sup>22</sup> See the box entitled “Implications of rising trade tensions for the global economy”, *Economic Bulletin*, Issue 3, ECB, 2018.

<sup>23</sup> Trade policies have been driven by unilateral actions. Since the Doha trade round came to a standstill, countries have increasingly relied on preferential trade agreements (PTAs) in order to gain access to new markets and resolve trade-related issues that are currently not addressed within the World Trade Organization (WTO). The number of PTAs surged from 50 in the early 1990s to around 200 in the early 2000s. All WTO members have concluded at least one PTA; some, such as the European Union, Chile and Mexico, have concluded more than 20.

<sup>24</sup> Further information on the use of anti-dumping measures according to WTO rules is available on the [WTO's website](#).

of measures imposed. The use of indirect measures, such as state loans to exporting companies, has also increased gradually.

**The rise in protectionism implies that a progressively larger share of global trade has been affected by trade distortions.** Data from the Global Trade Alert database show that by 2017 more than 50% of exports from G20 countries was subject to harmful trade measures, up from 20% in 2009 (see Chart 1). Accordingly, trade growth has decelerated more sharply in those sectors in which extensive discriminatory measures have been adopted than in sectors that have benefited from trade liberalisation.

**Along with these developments, public support for trade openness has declined, while protectionism has increased globally.** Perceptions of the risks associated with open trade have added to the broader list of concerns related to globalisation.<sup>25</sup> For example, free trade is sometimes believed to have made countries more vulnerable to international crises and spillovers from abroad. Given its distributional consequences, free trade is also considered to be a factor behind the rising inequality both within and across countries.<sup>26</sup> However, the merits of free trade are also widely recognised. International trade allows countries to specialise in the production of goods in which they have a comparative advantage, while at the same time enabling consumers to enjoy a greater variety of consumption goods. Empirical studies have found that trade openness has led to higher income per capita across countries, spurring productivity growth and helping to reduce poverty globally.<sup>27</sup> Nevertheless, the benefits of trade openness and their distribution across social groups vary between countries. Factors such as the nature of export specialisation, the degree of production diversification and the quality of a country's institutions are found to be important pre-conditions for the benefits of trade openness to be fully realised.<sup>28</sup> Some have also challenged the benefits of free trade by claiming that "unfair practices" have damaged domestic growth and job creation.<sup>29</sup>

### 3 Tariffs announced by the US Administration in 2018

**Protectionist threats made by the US Administration in 2017 have been followed by concrete actions over the past year.** As shown in Chart 2, the implementation of

<sup>25</sup> Draghi, M., "Sustaining openness in a dynamic global economy", speech at the Economic Policy Symposium of the Federal Reserve Bank of Kansas City, Jackson Hole, 25 August 2017.

<sup>26</sup> See, for example, Antràs, P., de Gortari, A. and Itskhoki, O., "Globalization, Inequality and Welfare", *Journal of International Economics*, No 108, September 2017, pp.387-412; and Rodrik, D., "The Globalization Paradox: Democracy and the Future of the World Economy", W.W. Norton, New York and London, 2011. However, other factors, such as technological change, were also identified as drivers of the rising inequality. For a review of the literature, see Helpman, E., "Globalization and Wage Inequality", *NBER Working Papers*, No 22944, National Bureau of Economic Research, December 2016.

<sup>27</sup> *The Role of Trade in Ending Poverty*, The World Bank and World Trade Organization, 2015.

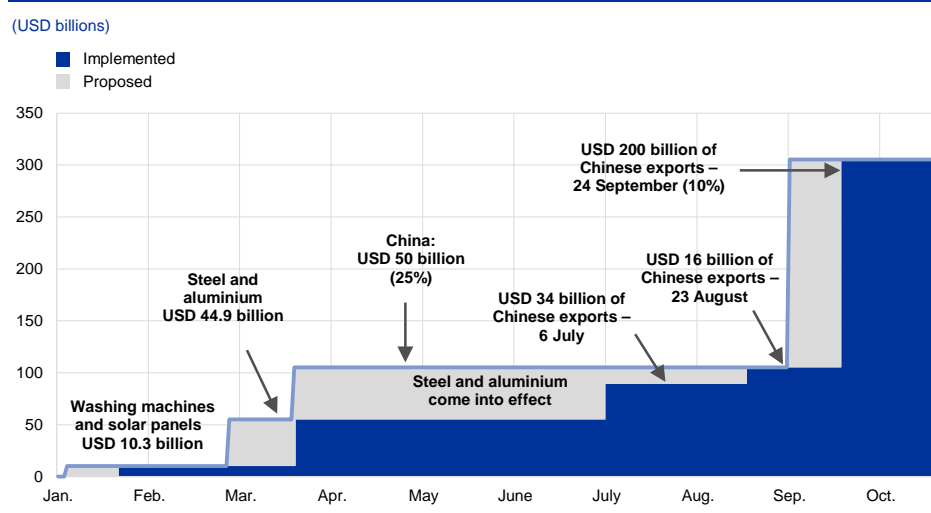
<sup>28</sup> See, for example, Helpman, E., "Globalization and Wage Inequality", *NBER Working Papers*, No 22944, National Bureau of Economic Research, December 2016; and Rodrik, D., Subramanian, A. and Trebbi, F., "Institutions Rule: The Primacy of Institutions Over Geography and Integration in Economic Development", *Journal of Economic Growth*, Vol. 9, No 2, June 2004, pp.131-165.

<sup>29</sup> For instance, forced intellectual property transfers from multinational companies investing in China are a long-standing concern, in both the United States and the European Union. For an account of recent disputes on technology transfer and intellectual property rights, see Jiming, H. and Posen, A.S. (eds.), "US-China Economic Relations: From Conflict to Solutions", PIIE Briefing, January 2019.

tariffs on solar panels and washing machines in January 2018 came first, followed by tariffs of 25% on imports of steel and 10% on imports of aluminium for a wide range of countries in March 2018. After an initial exemption, in June 2018 the tariffs on steel and aluminium were also applied to Canada, Mexico and the European Union, which resulted in a raft of retaliatory measures. The European Union imposed a 25% duty on a range of US products worth USD 3.2 billion, which came into force in the same month. The US Administration in turn initiated a new investigation of automobile and auto parts imports to determine their effects on national security, hinting at the possibility of a 20%-25% tariff increase. Box 1 assesses the potential impact that this would have on the world economy and the euro area if it were to materialise.

## Chart 2

### Timeline of tariffs proposed and implemented in 2018



Sources: Peterson Institute for International Economics, United States Trade Representative and ECB calculations.  
 Notes: The values of imports affected by the tariffs on washing machines and solar panels, and steel and aluminium refer to estimates produced by the Peterson Institute for International Economics. The percentages in brackets indicate the size of the applied tariffs.

**Tensions with China escalated in the second half of 2018.** Following an investigation by the US authorities into Chinese intellectual property practices, which concluded that China has a policy of forced technology transfer,<sup>30</sup> the US Administration initiated trade action against China.<sup>31</sup> The measures, implemented in July 2018, included 25% ad valorem duties on 1,300 product types imported from China, with an annual import value equivalent to USD 50 billion (see Chart 2). In September 2018 the US Administration announced a further wave of tariffs, targeting USD 200 billion of Chinese exports. China responded by imposing tariffs on exports from the United States worth USD 60 billion.

<sup>30</sup> The investigation concluded that “China uses foreign ownership restrictions, including joint venture requirements, equity limitations, and other investment restrictions, to require or pressure technology transfer from U.S. companies to Chinese entities”. In addition, it was found that “China also uses administrative review and licensing procedures to require or pressure technology transfer which, inter alia, undermines the value of U.S. investments and technology and weakens the global competitiveness of US firms”. For more information on the investigation, see the Office of the United States Trade Representative’s [March 2018 press release](#).

<sup>31</sup> For further information on the tariffs imposed under the Section 301 investigation of Chinese intellectual policy practices, see the Office of the United States Trade Representative’s [June 2018 press release](#).

**At the same time, there has been some de-escalation of trade tensions on other fronts.** Concerns over tensions between the United States and the European Union eased after the summit held in July 2018. In addition, Canada, Mexico and the United States reached an agreement to replace the North American Free Trade Agreement with the United States-Mexico-Canada Agreement (USMCA), which effectively maintains tariff-free trade for most goods. A truce agreed between China and the United States on 1 December 2018, whereby tariffs on USD 200 billion of Chinese imports would remain at 10% rather than be increased to 25% as previously announced, defused the US-China trade tensions temporarily. Nevertheless, there is still a strong risk of renewed escalation.<sup>32</sup>

**US tariffs against China target, in particular, the electronics and machinery sectors.** The tariffs imposed directly on China affect a broad range of industries, with a total nominal value of USD 217 billion, or 2% of Chinese nominal value added. The industries most affected are those that produce electronic components, electrical equipment and machinery (see Chart 3a), which all feature in the Chinese government's "Made in China 2025" industrial plan. With regard to the euro area, tariffs imposed by the United States affect around USD 5.5 billion of euro area value added, mainly in the basic metal and, to a lesser extent, the fabricated metal sectors.

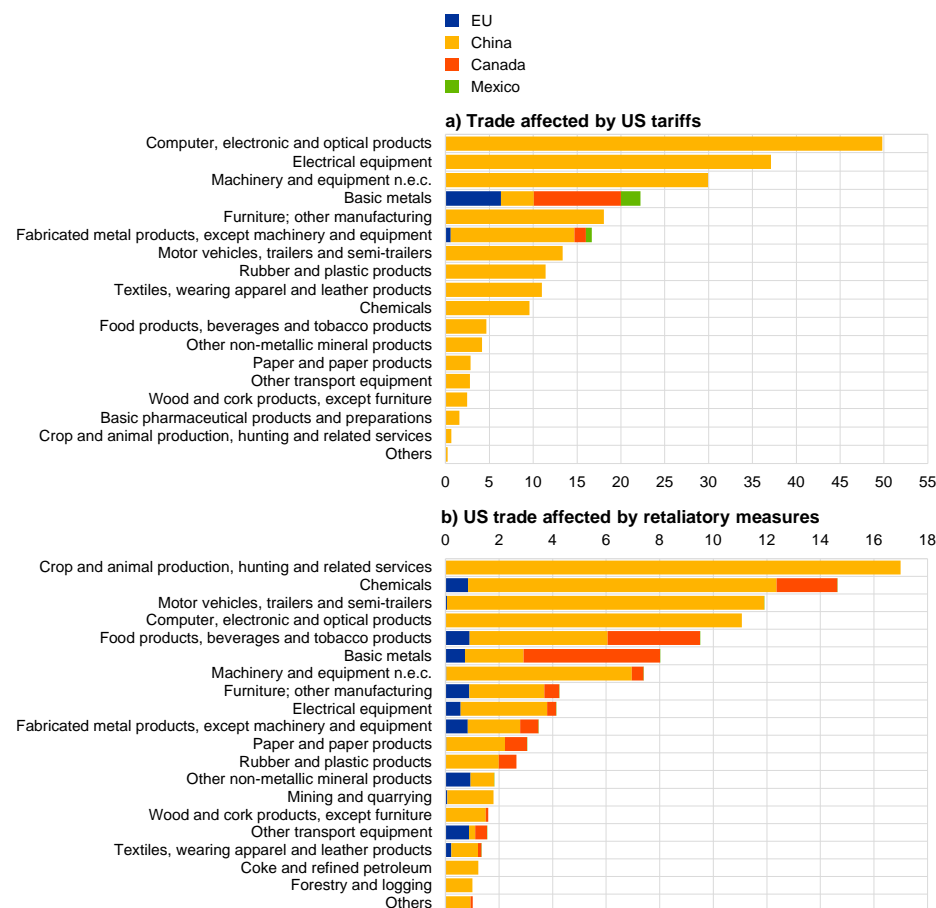
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<sup>32</sup> On 8 April 2019 the [Office of the United States Trade Representative](#) released a list of products to which additional tariffs are to be applied in response to harm allegedly caused by European Union aircraft subsidies. It also confirmed that the value of goods to be targeted is subject to an arbitration at the WTO, the result of which is expected in the summer.

**Chart 3**

**Trade affected by tariff measures in 2018**

(USD billions)



Sources: World Bank World Integrated Trade Solution (WITS), WTO and Comtrade.  
Notes: The list of sectors is based on the two-digit ISIC Rev. 4 classification, and quantities have been aggregated from HS6 product lists of affected goods.

**Retaliatory responses by the United States' trading partners, particularly China, have targeted US imports across a wide variety of industries and sectors.** The food, chemicals and car industries have been the sectors most affected by China's retaliation (see Chart 3b), with tariffs affecting around 7.5% of those sectors' combined value added. EU retaliatory measures have been much smaller and are targeting non-metallic minerals, electrical equipment, textiles, furniture, food products, other transport equipment (including light vehicles such as motorbikes) and chemicals, covering a total of 0.04% of US industrial value added.

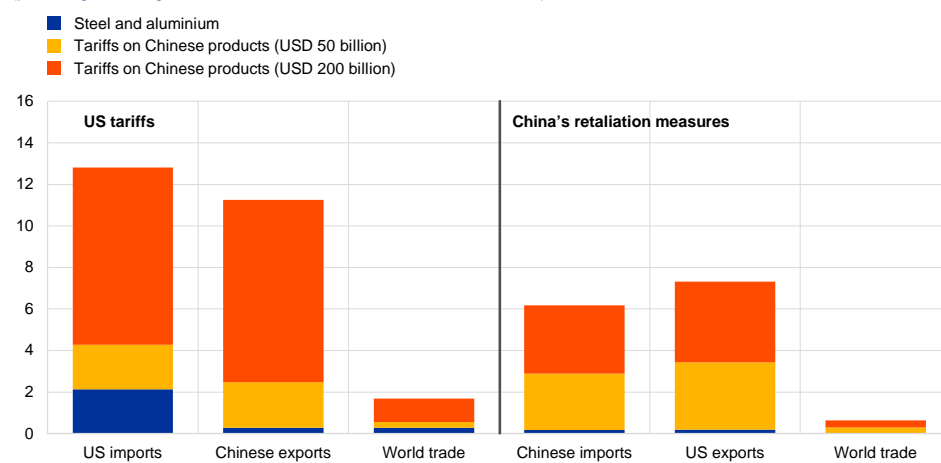
**The latest round of US tariffs imposed on China target a significant part of the two countries' bilateral trade, while the share of euro area and global trade directly affected is still limited.** As shown in Chart 4, the products targeted by the tariffs announced in the first half of 2018 by the US Administration and its trading partners affect relatively small shares of US (2%), euro area (0.2%), Chinese (2%) and world trade (0.4%). Their impact on the world economy is therefore likely to remain contained. By contrast, the latest round of US tariffs, coupled with China's retaliation measures in September 2018, target almost half of China's bilateral trade with the

United States. As a result, around 12% of total US and 8% of total Chinese goods trade is affected. To some extent, these tariffs may weigh on activity in the United States and China, and the organisation of production in supply chains could further amplify the adverse effects. The share of euro area and world trade affected remains small (2%).

#### Chart 4

#### US tariffs and China's retaliation measures: shares of US, Chinese and global trade affected

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



Sources: IMF and ECB staff calculations.

## 4 The macroeconomic implications of rising protectionism

This section discusses the short and long-term macroeconomic implications of rising protectionism from a theoretical and a model-based perspective. Section 4.1 describes the channels through which higher tariffs may affect activity and trade. In view of the progressive deterioration in global and euro area activity and trade data in recent months, Section 4.2 investigates whether the tariff measures implemented in 2018 might have been a contributing factor, including as a result of uncertainty effects. Finally, Section 4.3 discusses the possible consequences of a renewed surge in trade tensions.

### 4.1 Channels of transmission of rising protectionism

#### Rising protectionism can affect economic activity through several channels.

Higher import duties increase trade costs, which may alter both the quantity and the price of internationally traded goods. This is often referred to as the trade channel of transmission. The existence of complex global production supply chains can amplify this effect. In addition, higher trade costs can affect financial flows and credit conditions. This may occur, for example, if increased uncertainty over future trade policy leads to financial stress and a broad reassessment of risk premia. The way in which the different channels play out in a trade dispute, and the consequent impact on



economic activity, depends on several factors, including whether trading partners retaliate and whether the dispute remains confined to a small number of countries, rather than developing into a full-blown trade war.

**The impact on economic activity in the country imposing tariffs depends on a) whether imported goods can be substituted by domestic production, and b) whether trading partners retaliate.**

To the extent that the higher trade costs brought about by higher tariffs are not absorbed in lower profit margins for producers, import prices rise and relative prices change. Higher import prices push up domestic firms' production costs and domestic inflation, thereby lowering households' real disposable income. These effects weigh on consumption, investment and employment, and have a negative impact on activity. However, the higher prices of imported goods may also induce domestic customers to switch from imported to domestically produced goods. The relative importance of these two effects, and the net impact on economic growth, depends on the degree of substitutability between domestically produced goods and imported goods. If imported goods can be easily substituted through domestic production, consumption and activity rise.<sup>33</sup> The positive impact on activity could be lessened if the exchange rate appreciates following the increase in import prices.<sup>34</sup> In addition, if the trading partners hit by the tariffs retaliate – as is often the case – any potential benefit could be reversed. Domestic firms lose competitiveness in foreign markets, and exports and activity fall as a result. As such, rising trade distortions imply higher trade costs for all countries involved, which may hinder the optimal allocation of resources. All economies involved are, in the end, worse off.

**In a trade dispute involving two countries, third countries may temporarily benefit from rising protectionism.** Specifically, third countries can gain market share in countries where tariffs have risen. For example, in a trade dispute concerning exclusively the United States and China, euro area goods would gain competitiveness vis-à-vis US goods in China and vis-à-vis Chinese goods in the United States. This stems from the fact that higher tariffs make US goods more expensive in China and Chinese goods more expensive in the United States, with bilateral trade flows between the two eventually declining. The extent to which third countries benefit from this trade diversion depends on how easily a country can substitute imported products from different countries. Higher substitutability implies more trade diversion.

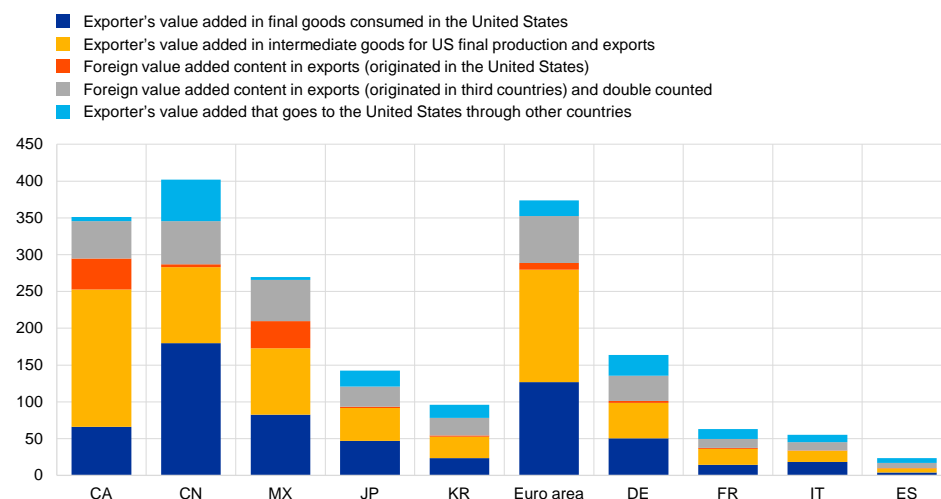
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<sup>33</sup> According to the economic literature, the dynamic effects of protectionism are similar to a negative supply-side shock, as its effects are recessionary and inflationary, with an ambiguous or minor impact on the trade balance. See Barattieri, A., Cacciatori, M. and Ghironi, F., "Protectionism and the Business Cycle", *NBER Working Papers*, No 24353, National Bureau of Economic Research, February 2018; and Furceri, D. et al., "Macroeconomic Consequences of Tariffs", *NBER Working Papers*, No 25402, National Bureau of Economic Research, December 2018.

<sup>34</sup> See Erceg, C., Prestipino, A. and Raffo, A., "The Macroeconomic Effects of Trade Policy", *International Finance Discussion Papers*, No 1242, December 2018. This paper shows that when tariffs are used in combination with export subsidies and this policy is expected to remain in place for a limited period, the exchange rate may not be able to fully offset the expenditure-switching effects of the policy, and this may have an expansionary impact. However, this is driven mostly by export subsidies (while tariffs have negligible or contractionary effects) and only applies if foreign countries do not take retaliatory measures.

**Chart 5****Production chain linkages in exports to the United States**

(USD billions)



Sources: World Input-Output Database (2016 release), Wang, Z., Wei, S.J. and Zhu, K., (2013), "Quantifying International Production Sharing at the Bilateral and Sector Levels", *NBER Working Papers*, No 19677, National Bureau of Economic Research, November 2013, and ECB staff calculations.

Notes: The latest observation is for 2014. The chart shows the breakdown of gross nominal exports to the United States into value added components. "Exporter's value added in final goods consumed in the United States" refers to an exporter's value added contained in final products exported to the United States; "Exporter's value added in intermediate goods for US final production and exports" refers to an exporter's value added contained in intermediate products which are used as input for US domestic production or the production of US exports; "Foreign value added content in exports" refers to the foreign value added (either from the United States or from third countries) contained in exports; "double counted" refers to the value added of intermediate products which cross the borders several times; and "Exporter's value added that goes to the United States through other countries" is the value added in intermediate products produced by an exporter which is used by third countries to produce goods to be exported to the United States. For the euro area aggregate, only extra-euro area countries are considered as other countries. The following abbreviations are used: CA for Canada, CN for China, MX for Mexico, JP for Japan and KR for South Korea.

### While the pace of expansion might have slowed in recent years, GVCs remain highly fragmented and can amplify the impact of tariffs on trade and activity.

GVCs have become increasingly complex, with goods crossing borders multiple times during the production process. Although analysis<sup>35</sup> by the Organisation for Economic Co-operation and Development (OECD) suggests that GVCs' pace of expansion might have slowed since 2011, production remains highly fragmented across borders. This is well illustrated in Chart 5, which considers the GVC linkages embodied in exports of goods to the United States from several trading partners. In the case of the euro area, only around one-third of exports are consumed in the United States (see the blue parts in Chart 5). In fact, a significant share of euro area exports to the United States consists of intermediate goods which are used in the production of goods in the United States and then re-exported to third countries (see the yellow parts in Chart 5). In turn, domestic production and exports include intermediate inputs from third countries. For example, euro area exports to the United States include goods from countries that are closely embedded in European production chains, such as, for instance central and eastern European countries in the automobile sector (see the grey parts in Chart 5). Euro area exports also include value added from the United States itself (see the red parts in Chart 5). Finally, euro area exports are sometimes first shipped for processing to third countries, such as Mexico, before being exported to the United States (see the blue-shaded parts in Chart 5).

<sup>35</sup> See [Trade Policy Implications of Global Value Chains](#), Trade Policy Brief, OECD, December 2018.

**In a world characterised by complex GVCs, goods cross borders several times and tariff costs accumulate owing to the cascading effect.** This occurs when tariffs are applied to intermediate goods. Intermediate inputs incur tariff costs every time they are shipped to another country for further processing. By the time the finished goods have reached the final consumer, the final price may have risen significantly. Moreover, imported intermediate goods are often used in domestic production. When these goods are subject to tariffs, domestic producers in the country imposing the tariffs may also suffer. Higher production costs are likely to be passed on through the various stages of the value chain, with demand, production and investment being negatively affected in all phases. In addition, tariffs are typically levied on a good's gross value of imported goods. Therefore, if foreign inputs account for a large share of exports, a low nominal tariff can translate into a high value-added tariff for the exporter. Compared with a situation in which the entire value added of goods is produced domestically, tariffs may have a proportionally larger impact on the profits of exporting firms, thereby increasing the incentive to pass the higher costs on through the value chain. Third countries involved in intermediate stages of production may also face higher production costs, reducing the possible benefits of trade diversion.

**An increase in uncertainty, coupled with financial stress, could also amplify the impact of rising protectionism on economic activity.** There are several ways in which elevated uncertainty about future trade policies can dampen demand. For example, households may delay spending when economic prospects become more uncertain. Furthermore, firms may reassess their economic prospects amid rising uncertainty, taking a “wait and see” approach and postponing investment.<sup>36</sup> In response to uncertainty shocks, firms can also adjust their inventory policies by disproportionately cutting their foreign orders of intermediate goods, with a disproportionate impact on international trade flows.<sup>37</sup> An uncertain trade policy outlook may also give firms a reason to delay entering a foreign market or upgrading their technology. Finally, elevated uncertainty may push up borrowing costs for households and firms as investors demand greater compensation to protect themselves against future risks.<sup>38</sup> The materialisation of a global uncertainty shock, such as a trade war, may also drive investors to shift their portfolios to safe-haven currencies, with implications for the allocation of capital flows across countries.

**Higher trade costs can also weigh on productivity.** The tighter financing conditions associated with rising uncertainty can raise the cost of capital, with a negative impact on investment that could hinder productivity growth in the countries affected by the tariffs. Trade barriers can also lead to the misallocation of production factors across firms and countries. Less-open markets diminish global competition, thereby reducing

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<sup>36</sup> See Bloom, N., “The Impact of Uncertainty Shocks”, *Econometrica*, Vol. 77, No 3, May 2009; and Handley, K. and Limão, N., “Trade and Investment under Policy Uncertainty: Theory and Firm Evidence”, *American Economic Journal: Economic Policy*, Vol. 7, No 4, November 2015, pp.189-222.

<sup>37</sup> See Novy, D. and Taylor, A.M., “Trade and Uncertainty”, *CEP Discussion Papers*, No 1266, Centre for Economic Performance, The London School of Economics and Political Science, May 2014; and Handley, K. and Limão, N., “Trade and Investment under Policy Uncertainty: Theory and Firm Evidence”, *American Economic Journal: Economic Policy*, Vol. 7, No 4, November 2015, pp.189-222.

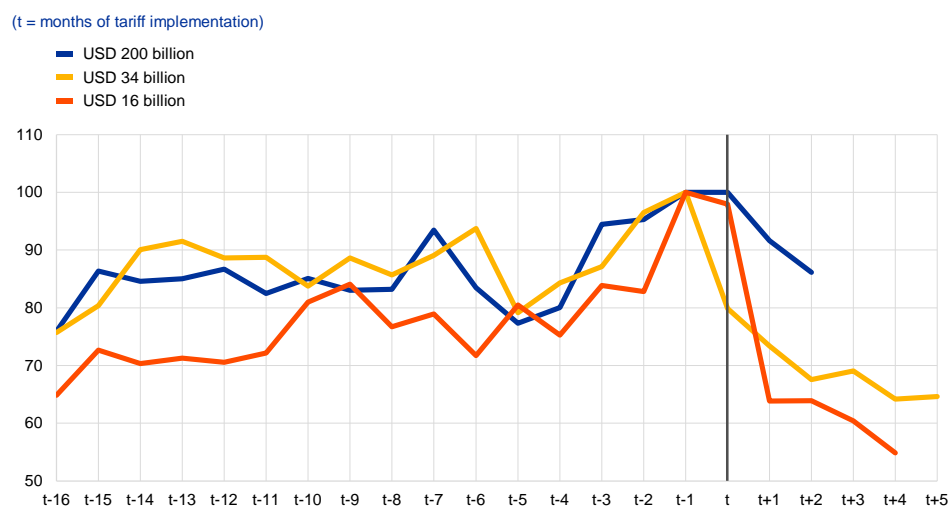
<sup>38</sup> See Goldberg, P. and Pavcnik, N., “The Effects of Trade Policy”, in Bagwell, K. and Staiger, R.W. (eds.), *Handbook of Commercial Policy*, Volume 1, Part A, February 2016.

incentives for innovation and technological advances, and keeping less-productive firms in the market. As a result, aggregate productivity may decline.<sup>39</sup>

#### 4.2 Can the impact of the tariffs announced by the United States and its trading partners already be detected in the data? Some initial evidence

**In the United States, firms operating in the targeted sectors seem to have initially circumvented part of the adverse impact of tariffs by frontloading their imports.** US imports from China of products targeted by the US tariffs increased before the tariffs came into effect and declined in the aftermath (see Chart 6).<sup>40</sup> Total US imports also rose sharply, by 9.1% year on year in the third quarter of 2018, partly reflecting firms' stockpiling. The increase was associated with a surge in inventories, while business investment declined. Although this suggests the presence of frontloading effects, the sharp rise in imports may also reflect buoyant US domestic demand on the back of procyclical fiscal stimuli and strong labour market conditions.

**Chart 6**  
US imports from China and tariff implementation



Sources: Census and ECB staff calculations.  
Note: The data shown in the chart are for nominal imports.

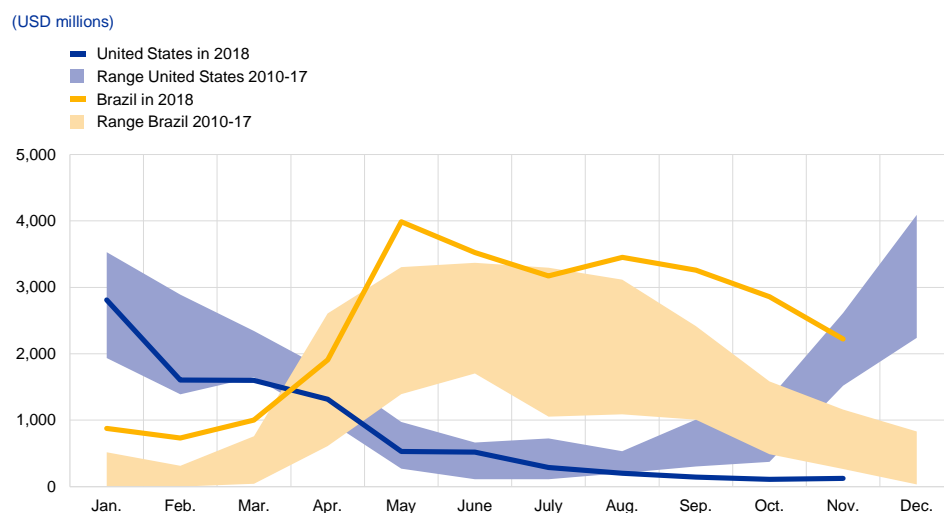
**Trade diversion effects may also be at play.** In retaliation for US tariffs on Chinese goods, the Chinese authorities imposed a 25% tariff on Chinese imports of US soybeans in July 2018. While total Chinese imports of vegetable products (mostly soybeans) remained broadly stable following the announcement, imports from the United States were significantly lower than usual. However, imports from Brazil, which

<sup>39</sup> See Melitz, M.J., "The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity", *Econometrica*, Vol. 71, No 6, November 2003, pp. 1695-1725; and Berthou, A. et al., "Quantifying the losses from a global trade war", *Eco Notepad*, Banque de France, for a review and an analysis of the impact of trade openness on aggregate productivity.

<sup>40</sup> See Amiti, M., Redding, S.J. and Weinstein D.E., "The Impact of the 2018 Trade War on U.S. Prices and Welfare", *CEPR Discussion Papers*, No 13564, March 2019. This paper finds that tariffs imposed on US imports in 2018 were completely passed through to domestic prices of targeted goods and implied a decrease in imports in affected sectors by around 54%, relative to those in the unaffected sectors.

are unaffected by additional tariffs, have been rising more sharply than usual (see Chart 7).

**Chart 7**  
Chinese imports of vegetable products by counterparty



Sources: CEIC and ECB staff calculations.

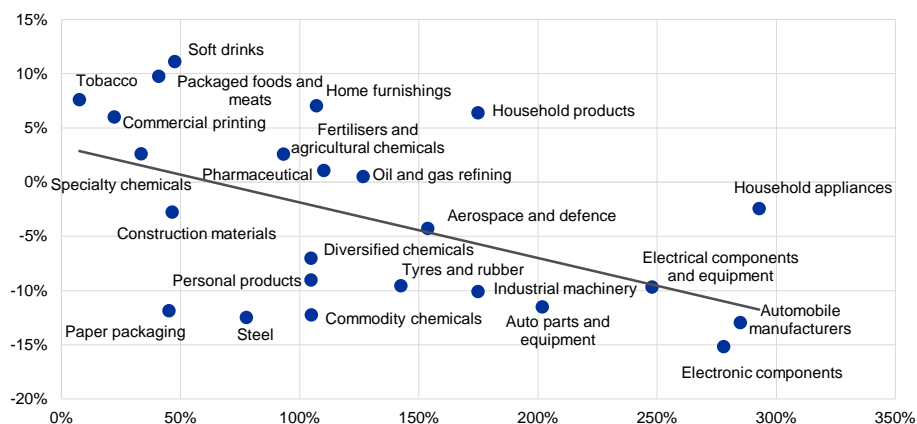
Notes: The shaded areas show the range of values for imports of vegetable products from the United States and Brazil for each month of the year in the period 2010-17, in order to show the typical seasonal pattern. The latest observation is for September 2018.

**The impact of rising tariffs on financial markets appears to have remained confined to the targeted sectors.** Global financial markets have generally been resilient to the announcements of new tariffs. This may reflect the fact that they have thus far targeted only a small fraction of global trade. At the same time, US companies potentially affected by higher tariffs, such as those highly exposed to regions outside the United States in terms of revenue generation, have clearly underperformed (see Chart 8). An analysis by the ECB indicates that underperformance in the affected sectors can almost always be traced back to changes in risk premia, whereas fundamentals – such as earnings expectations and credit risk – do not change much.<sup>41</sup> Chinese equity prices were also harder hit in 2018 in the wake of several trade announcements.

<sup>41</sup> For a further analysis of the financial stability implications of rising protectionism, see Dizioli, A.G. and van Roye, B., "The resurgence of protectionism: potential implications for global financial stability", *Financial Stability Review*, ECB, November 2018.

## Chart 8 Sectoral developments of equity returns

(x-axis: sectoral trade openness as a percentage; y-axis: cumulated percentage return after six tariff announcements)



Sources: Haver Analytics, Bloomberg and ECB calculations.

Notes: The chart shows the cumulated shares reaction following six major US and China tariff announcements since the beginning of 2018. Sub-industries classified according to the eight-digit Global Industry Classification Standard (GICS) of the S&P 500 sectoral indexes were matched to imports/exports and value added data according to the three-digit and four-digit North American Industry Classification System (NAICS). Sectoral trade openness is calculated as the sum of imports and exports divided by gross value added in the respective sub-industry in 2016. The latest observation is for 5 October 2018. The GICS sub-industries shown in the chart constitute 35% of the market capitalisation of the five underlying sectors in the S&P 500 for which trade and value added data were available (Materials, Industrials, Consumer Discretionary, Consumer Staples and Information Technology) and 20% of the total market capitalisation of the S&P 500. The NAICS classifications used constitute 58% of the total US trade in goods in 2016.

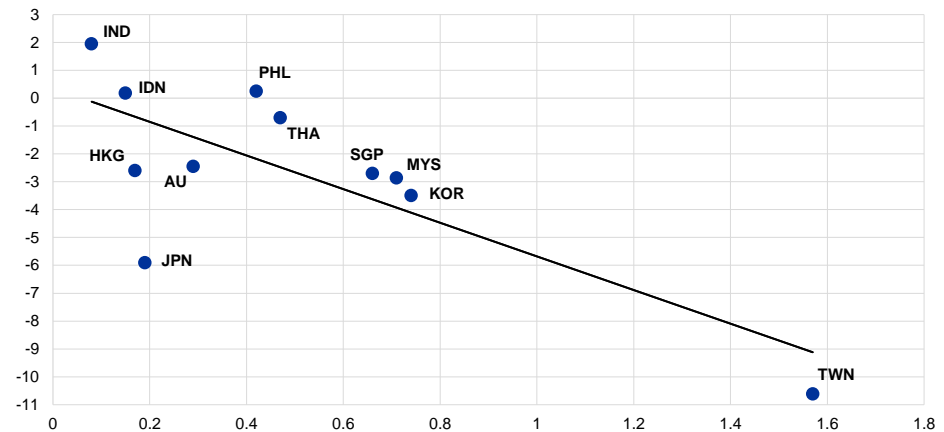
**Besides its impact on financial markets, rising protectionism can also affect sentiments more broadly.** Recent survey-based indicators point to some tangible moderation in activity in China, with trade disputes often being identified as one of the factors contributing to the weak Chinese investment seen in recent quarters. However, this decline in investment might also have been driven by tighter domestic credit conditions. As discussed in Section 4.1, the extent to which Asian economies' exports to China are embedded in China's exports to the United States (e.g. as components of Chinese products), US tariffs could also impinge on their exports via the regional value chain. There seems to be a negative correlation between the exposures of Asian countries to the Chinese-US supply chain and the changes in countries' manufacturing Purchasing Managers' Index (PMI) since January 2018, which suggests that rising tariffs may be affecting sentiment across the region (see Chart 9). In the United States, consumer and business confidence indicators have fallen somewhat in recent months, although they remain close to historically high levels. US firms, however, have become increasingly worried about the effects of trade tensions, and a number of companies report that they have reassessed their capital investment plans in the light of tariff concerns.<sup>42</sup>

<sup>42</sup> Survey of Business Uncertainty conducted by the Federal Reserve Bank of Atlanta, Stanford University and the University of Chicago Booth School of Business in July 2018.

### Chart 9

#### Changes in Asian countries' manufacturing PMI and their indirect exposures to United States tariffs

(y-axis: change in manufacturing PMI since January 2018, in index points; x-axis: value added in US imports from China, as a percentage of country GDP)



Sources: OECD and ECB staff calculations.

Note: The countries shown are Australia (AU), Hong Kong (HKG), Indonesia (IDN), India (IND), Japan (JPN), Korea (KOR), Malaysia (MYS), Philippines (PHL), Singapore (SGP), Thailand (THA) and Taiwan (TWN).

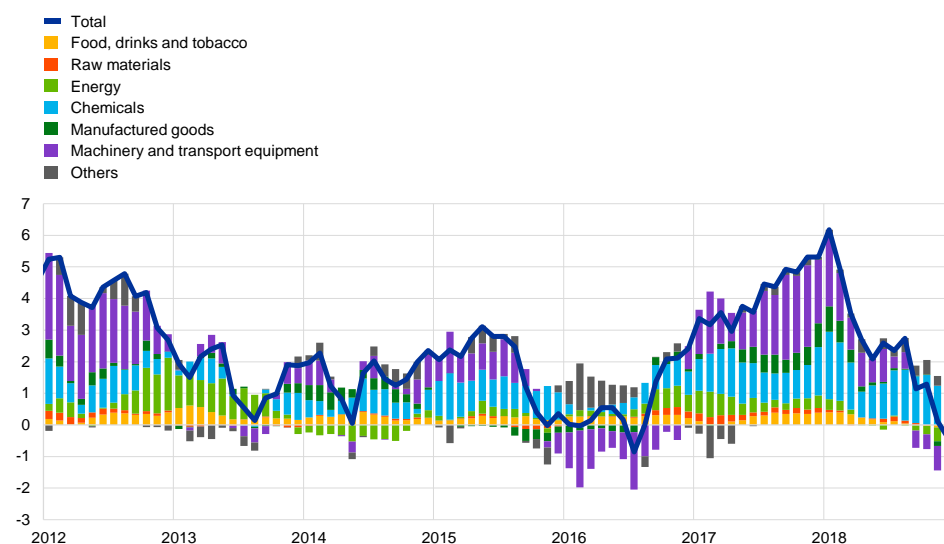
#### Uncertainty related to rising protectionism might also have been affecting external demand for euro area goods.

Extra-euro area exports have been particularly weak since the start of 2018, with the decline being driven mainly by a sharp deterioration in the manufacturing, machinery and transport equipment sectors (see Chart 10). Manufacturing exports are closely linked to trading partners' investment growth and, historically, tend to display a relatively high negative correlation with some measures of uncertainty, such as the VIX<sup>43</sup>. While this suggests that uncertainty related to rising protectionism might have affected euro area exports, it is difficult to disentangle this possible effect from other factors, including the introduction of new emission standards in Europe, specific adverse changes to regulations in the car sector in China, financial turbulence in emerging markets and Brexit.

<sup>43</sup> Volatility index created by the Chicago Board Options Exchange.

## Chart 10 Euro area exports

(volume; three-month moving average of year-on-year growth rates and contributions)



Sources: Eurostat and ECB staff calculations.  
Note: The latest observation is for December 2018.

**Higher trade uncertainty may also have caused euro area exporters to curb investment.** Survey and model-based evidence shows that global uncertainty has an adverse effect on euro area business investment.<sup>44</sup> Chart 11 shows that in 2018 the capital expenditure to asset ratio of firms operating in sectors affected by the US tariff actions and threats (solar panels, washing machines, metal and cars) was lower than it was for firms operating in other sectors.<sup>45</sup> While investment in the two groups of firms showed similar dynamics before 2018, trends in the investment-to-asset ratio have been decoupling since then. Apart from this, investment dynamics might also have been affected by developments specific to the car sector.

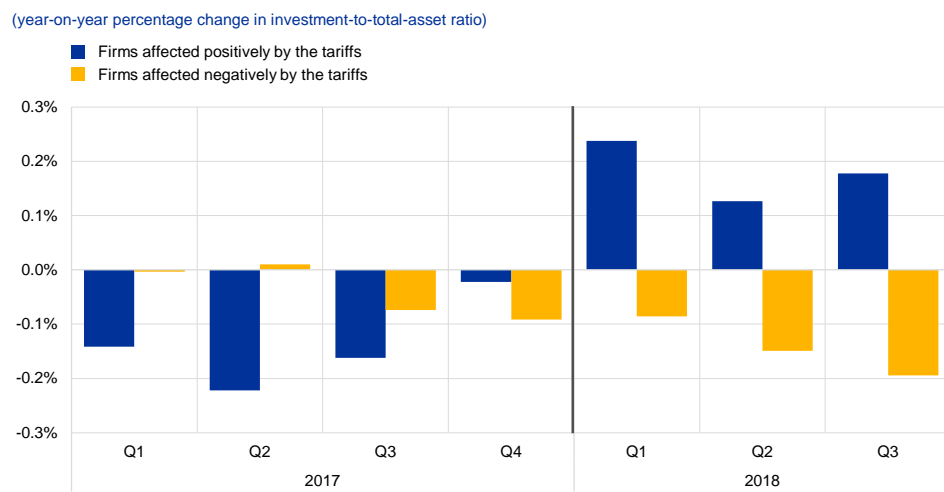
<sup>44</sup> See the box entitled “Driving factors of and risks to domestic demand in the euro area”, *Economic Bulletin*, Issue 1, ECB, 2019.

<sup>45</sup> A multi-country, multi-sector model simulates the effects of tariffs that have already been implemented (from official lists) and the threat of tariffs on US car imports and the respective retaliations against sectors in the United States. The model identifies sectors that are negatively affected by the tariff measures and sectors that benefit from the tariff measures (through trade diversion). The resulting effects include an indirect impact on competitiveness and supply chains.



**Chart 11**

**Change in the investment-to-total-asset ratio of firms positively/negatively affected by tariffs**



Source: Non-financial corporations (NFCs) in the Dow Jones Euro Stoxx 300 index.

Notes: The sample consists of NFCs in the Dow Jones Euro Stoxx 300 index and varies over time owing to data availability. The measure shown is the year-on-year percentage change in investment-to-total-asset ratio, defined as the ratio of capital expenditure to total assets. NFCs are grouped on the basis of whether they are positively (blue) or negatively (yellow) affected by the threat of tariffs in the simulations.

### 4.3 What might be the impact of a renewed escalation of trade tensions? Some model-based simulations

**The risks related to a further exacerbation of trade tensions remain prominent, as more concrete actions could follow.** To assess the impact of a renewed escalation of trade tensions, this subsection investigates the scenario of a hypothetical trade war in which the United States increases tariff and non-tariff barriers on imports from all trading partners by 10%, and the other countries retaliate symmetrically. The impact would, of course, be much more pronounced in the case of a free-for-all, full-blown trade war.

**Despite their limitations, model-based estimates can help to gauge some of the medium and long-term implications of an escalation in trade tensions.** Two different methodologies are used to shed light on both medium and long-term outcomes. The IMF's Global Integrated Monetary and Fiscal Model (GIMF)<sup>46</sup>, in combination with the ECB's Global model<sup>47</sup>, are employed to investigate the effects of a trade war scenario over a medium-term horizon. Under this scenario, not only trade, but also confidence effects are assessed.<sup>48</sup> In order to gauge the long-term (steady-state) implications for trade, a multi-country and multi-sector general

<sup>46</sup> See Kumhof, M. et al., "The Global Integrated Monetary and Fiscal Model (GIMF) – Theoretical Structure", *IMF Working Papers*, No 10/34, IMF, February 2010.

<sup>47</sup> See Dieppe, A. et al., "ECB-Global: Introducing the ECB's global macroeconomic model for spillover analysis", *Economic Modelling*, Vol. 72(C), June 2018, pp. 78-98.

<sup>48</sup> The scenario reproduces model-based simulations as reported in the box entitled "Macroeconomic implications of increasing protectionism", *Economic Bulletin*, Issue 6, ECB, September 2018; and in Cœuré, B., "The consequences of protectionism", panel contribution at the 29th edition of the workshop "The Outlook for the Economy and Finance", "Villa d'Este", Cernobbio, 6 April 2018.

equilibrium model is used. In this model, tariff and non-tariff barriers are assumed to be 10% higher on a permanent basis, thereby allowing long-term predictions to be made.<sup>49</sup>

**In the simulations of medium-term effects, an escalation of trade tensions might have a significant direct impact on US activity, compounded by heightened financial stress and a drop in confidence.** An increase in tariff and non-tariff barriers on imports induces domestic consumers and firms to switch to domestically produced goods. However, this effect is likely to be more than offset by the increase in prices and the reduction in exports resulting from the retaliatory measures taken by all trading partners. Consequently, the direct effects on US GDP are negative and could lower activity by 1.5% (relative to the baseline after the first year). Confidence effects stemming from a tightening of financing conditions could depress US GDP further. For the purpose of this scenario, confidence effects are simulated assuming an increase in corporate bond risk premia of 50 basis points and a fall in stock prices of two standard deviations in all countries.<sup>50</sup>

**Although some countries may initially benefit from trade diversion, global trade and global activity are expected to decline significantly.** Chinese producers may improve their competitiveness in third countries vis-à-vis US producers, as all US trading partners would raise tariff and non-tariff barriers on imports from the United States in the simulated scenario (see Chart 12 for the first-year effects). Therefore, in this simulation, the trade effects on China's GDP are slightly positive (+0.6%) and are only partially outweighed by confidence effects. Turning to the euro area, despite some possible gains in export market shares, the spillovers arising from the deterioration in global confidence would most probably outweigh the gains in competitiveness, thus causing an overall modest decrease in activity. Finally, global trade and global activity could fall by more than 2.5% and 1% respectively as a result of the combined negative effects via the trade and the financial channels.

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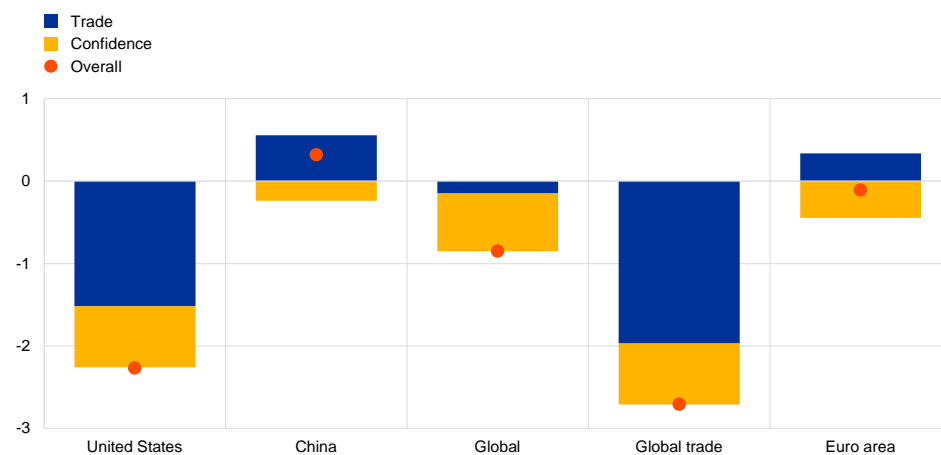
<sup>49</sup> While measures are assumed to be in place for only two years when assessing the medium-term effects, in the steady-state simulations it is presumed that all substitutions and adjustments have been made, given that increases in trade costs are permanent.

<sup>50</sup> The results of the simulations are predicated on some important modelling choices. Trade disputes are assumed to last only two years, and it is assumed that additional fiscal revenues generated by tariff increases are used to reduce budget deficits rather than to support demand. Monetary policy and exchange rates are assumed to react endogenously in all countries. The results should therefore be treated with a degree of caution.

## Chart 12

### Estimated impact of an escalation in trade tensions – first-year effects

(GDP response, deviation from baseline levels; percentages)



Source: ECB calculations.

Notes: The results are a combination of the direct trade effects derived from the GIMF model and the confidence effects modelled using the ECB's global model.

### Heightened trade tensions could also have pronounced long-term effects on US exports and imports.

In the model simulations, the steady-state effects account for trade through supply chains, although they disregard financial channels and the confidence effects that might arise in the medium term.<sup>51</sup> In the long term, consumers and producers could fully switch to products from domestic or third markets, while some production processes could be partly relocated to destination markets affected by the measures. In the United States, trade flows could be severely affected, with real exports declining by 26.6% and imports decreasing to a lesser extent (22.8%), with an overall negative net trade effect on activity. The large impact on US flows reflects the fact that US exports to and imports from all trading partners face higher tariffs. By contrast, China is likely to incur more limited losses (see Chart 13), as lower exports to the United States are partly offset by higher exports to those countries in which China has improved its price competitiveness vis-à-vis US producers. Similarly, other countries could improve their competitiveness in Chinese markets at the expense of the United States, replacing them as a source of exports to China.<sup>52</sup>

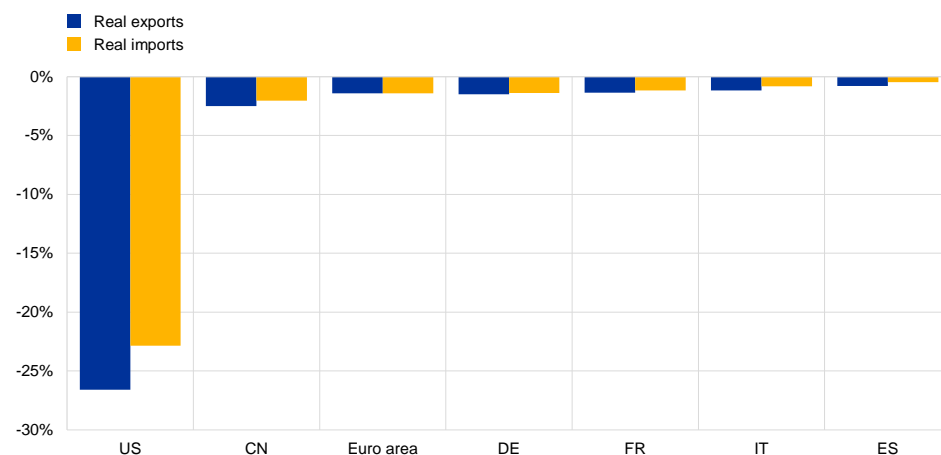
<sup>51</sup> For details of the model, see Cappariello, R. et al., "Protectionism and Value Chains, Quantifying the General Equilibrium Effects", *Working Paper Series*, ECB, forthcoming.

<sup>52</sup> The estimated impact on trade is sensitive to the choice of trade elasticities. The rather sizeable response of trade volumes to higher tariffs in our simulations reflects the specific characteristics of this class of models. It is well documented in the academic literature that standard macroeconomic models find lower price elasticities than models estimated at the sectoral level. Aggregating those sectoral elasticities to the country level leads to higher elasticities, which are heterogeneous across countries and depend on the degree of specialisation and openness across sectors. See, for example, Imbs, J. and Mejean, I., "Trade elasticities", *Review of International Economics*, Vol. 25, No 2, 2017, pp. 383-402.

**Chart 13**

**Estimated impact of an escalation in trade tensions on trade – long-term effects**

(deviations from current real trade as a percentage)



Sources: World Input-Output Database (2016 release) and ECB staff calculations.

Notes: Changes in total real exports and imports have been aggregated from changes in sector-level real bilateral trade by using shares of corresponding nominal values. Nominal bilateral sector-level trade changes have been deflated by the respective price changes. The euro area includes both intra- and extra-euro area trade. CN is used as an abbreviation for China.

**For the euro area, the trade effects would be relatively contained.** The impact through the trade channel on the euro area's trade would be small overall, with heterogeneous effects across countries and sectors (see Chart 13). However, the effects of an escalation of trade tensions could be more pronounced owing to uncertainty effects and productivity losses.

**Box 1**

**Assessing the impact of the threat of auto tariffs on the global economy and the euro area**

Prepared by Vanessa Gunnella

**This box assesses the possible impact of an increase in tariffs on automotive imports to the United States.** The simulations assume an increase in tariffs on US car imports from all trading partners except Canada and Mexico.<sup>53</sup> Trading partners would retaliate symmetrically<sup>54</sup>.

**Vehicle production is organised in very complex cross-border supply chains.** Sector interconnectedness is extremely high across the countries party to the United States-Mexico-Canada Agreement (USMCA). Taken together, vehicles assembled in Canada and Mexico and exported to the United States contain levels of US value added as high as 22% (see the red part in Chart A). Conversely, vehicles imported from Japan, Korea and Germany have little US content (around 2%). Exports to the United States also consist of intermediate inputs used by the US domestic vehicle industry to produce cars for domestic consumption and export (see the yellow part in Chart A). Therefore, while tariffs on US car imports could be discriminatory against foreign producers, US domestic production and exports could also suffer from the increase in the prices of car parts (proportionately to the red and the yellow parts in Chart A). In particular, foreign carmakers exporting

<sup>53</sup> A side agreement within the USMCA trade deal excludes the application of Section 232 tariffs (including a potential auto tariff) on Canada and Mexico.

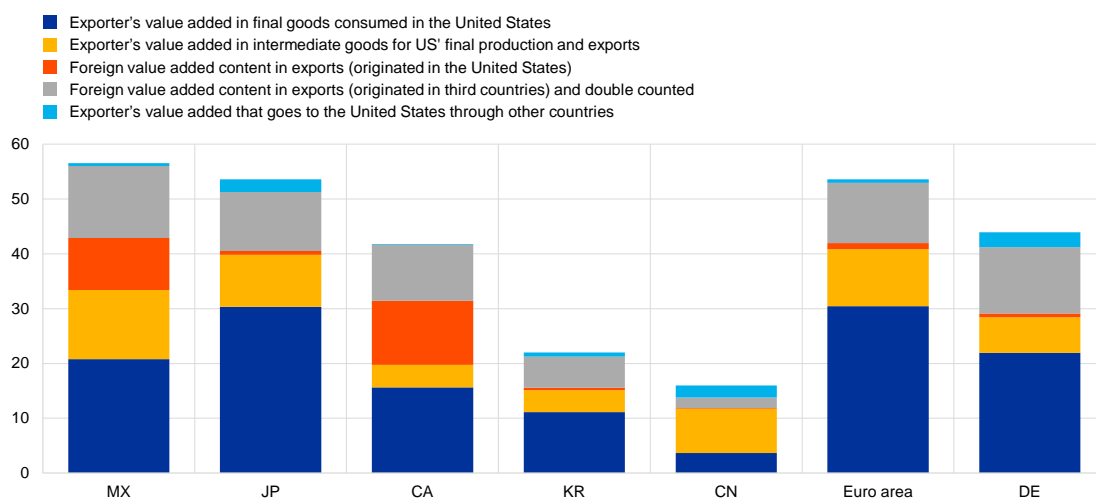
<sup>54</sup> Specifically, countries hit by the 25% tariff on cars would retaliate by targeting the US car sector and by raising tariffs on the products that had previously been involved in retaliatory action.

to the United States would be affected by tariffs on products exported directly to the United States (see the blue part in Chart A) and, to a smaller extent, indirectly through products exported via other countries (see the blue-shaded part in Chart A). However, they would not be affected with regard to the value added content of exports which is attributable to third countries or with regard to the share of exports – this is merely back-and-forth trade which does not involve any value added (see the grey part in Chart A).

## Chart A

### Production chain linkages in vehicle exports to the United States

(exports to the United States; USD billions)



Sources: World Input-Output Database (2016 release), Wang, Z., Wei, S.J. and Zhu, K., "Quantifying International Production Sharing at the Bilateral and Sector Levels", *NBER Working Papers*, No 19677, National Bureau of Economic Research, November 2013, and ECB staff calculations.

Notes: The latest observation is for 2014. The chart reports the breakdown of gross nominal exports to the United States into value added components.

"Exporter's value added in final goods consumed in the United States" refers to an exporter's value added contained in final products exported to the United States; "Exporter's value added in intermediate goods for US final production and exports" refers to an exporter's value added contained in intermediate products which are used as input to US domestic production or to the production of US exports; "Foreign value added content in exports" refers to the foreign value added (either from the United States or from third countries) contained in exports; "double counted" refers to the value added of intermediate products which cross borders several times and "Exporter's value added that goes to the United States through other countries" is the value added in intermediate products produced by an exporter which is used by third countries to produce exports to the United States. For the euro area aggregate, only extra-euro area countries are considered as other countries. The following abbreviations are used: CA for Canada, CN for China, MX for Mexico, JP for Japan and KR for South Korea.

### The steady-state effects of an increase in tariffs on US vehicle imports would be concentrated in the car sector.

Simulations performed using the multi-country multi-sector general equilibrium model described above suggest that US consumers could switch to vehicles produced in the United States or in Mexico and Canada (which are not subject to the tariff measure) and the production of vehicles would be partly relocated there. As a consequence, the car industry in the United States would increase its value added by 12% (0.1% of US nominal value added) as, also, would Canada and Mexico (14% and 10% increase in value added respectively). In terms of value added, the Japanese and the euro area car sectors would incur a loss of around 10% and 4% respectively. Retaliatory tariffs and the increase in input prices could affect other sectors in the United States, thereby offsetting the positive effect arising from gains in competitiveness for US car producers.

### The effects of tariffs are amplified by the car industry's cross-border global value chains (GVCs).

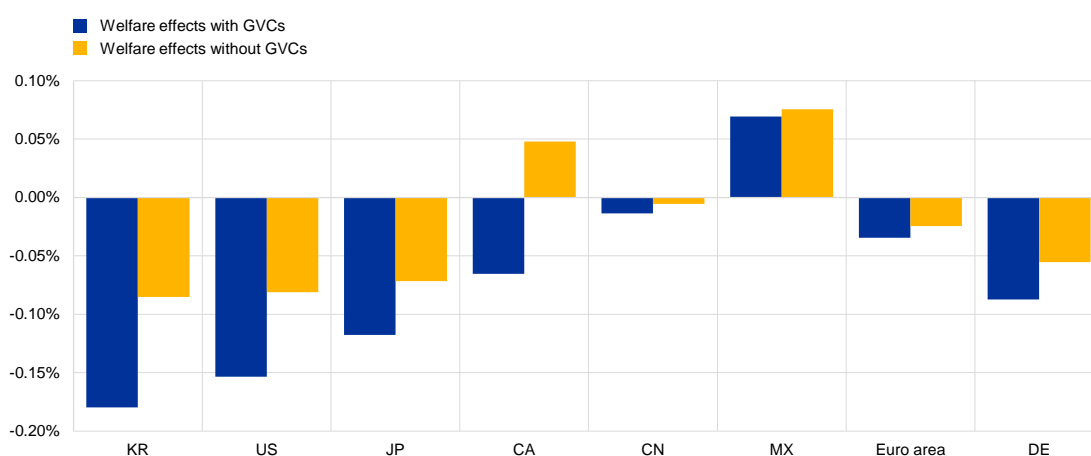
Chart B compares the welfare effects deriving from the multi-sector model with global GVC effects in place against the same model, but with trade attributed only to final goods (so that the amount of trade subject to tariffs stays the same). Trade between sectors within a country is also totally attributed to final goods – in the model without GVCs, tariffs would only be applied once a final good crossed a border. The results confirm that the organisation of car production in supply chains involving several stages of production in several countries (see Chart A) plays an important role in

transmitting tariff effects: failing to account for the GVC-related trade in the sector-level model would understate the welfare effects by at least 10% in the case of the euro area. The amplifying effects of GVCs are even more evident in the case of the United States, whose car sector relies heavily on imported intermediate inputs. The role of GVCs is particularly interesting in the case of Canada. Without accounting for GVC effects, Canada would experience some gains in terms of welfare. However, when the indirect and loop effects of tariffs through supply chains (e.g. increase in prices also through tariffs affecting the United States) are taken into account, the welfare effects turn negative.

## Chart B

### Welfare effects of tariffs

(deviation from non-tariff welfare as a percentage)



Sources: World Input-Output Database (2016 release) and ECB staff calculations.

Notes: Welfare is defined as real household income. The following abbreviations are used: CA for Canada, CN for China, MX for Mexico, JP for Japan and KR for South Korea.

**Overall, the impact of rising tariffs on cars is assessed as being more pronounced for car-exporting countries and could be intensified by confidence effects.** Although world unit production of cars is large, the auto industry accounts for only a small share of value added in most countries. It is estimated that the impact on the euro area as a whole would be small, even when the magnifying effects of global supply chains are taken into account. However, the consequences of an increase in car tariffs may weigh significantly on some countries. It is assessed that a possible increase in tariffs would have some negative effects in the United States and in those countries with a large exposure to the US market – chiefly South Korea and Japan. In addition, confidence effects or the effects of uncertainty with regard to the car industry that have not been taken into account could have a more negative impact on the world economy.

## 5 Conclusions

**Taken in isolation, the repercussions of the tariffs implemented in 2018 pose only a modest adverse risk to the global and euro area outlooks.** Preliminary evidence indicates that, in order to circumvent the effects of rising tariffs, firms operating in the targeted sectors may have been frontloading their import orders.

While trade flows in the affected sectors may have started to decelerate after the tariffs came into effect, particularly in China, the impact of implemented tariffs and tariff announcements owing to uncertainty effects appears to have remained confined to the targeted sectors for the time being.

**If trade tensions were to escalate once again, however, the impact would be larger.** Model-based simulations indicate that the medium-term direct impact of an escalation could be sizeable, compounded by heightened financial stress and a drop in confidence. Despite some trade diversion effects, euro area and global trade and, therefore, activity, would decline. The longer-term effects would be even more pronounced.

**Trade liberalisation within the framework of multilateral cooperation has been a key factor driving global economic prosperity.** Trade integration helped to drive economic growth in advanced and developing economies in the second part of the 20th century, while also helping to pull hundreds of millions of people out of poverty. At the same time, although free trade is often seen as one of the factors behind rising inequality both within and across countries, winding back globalisation is the wrong way to address these negative effects. A retreat from openness will only fuel more inequality, depriving people of the undisputed economic advantages that trade and integration bring. Instead, countries should seek to resolve any trade disputes in multilateral fora. By encouraging regulatory convergence, multilateral cooperation helps to protect people from the unwelcome consequences of openness, and therefore remains crucial as a response to concerns about the fairness and equity of trade. The distributional and social effects of greater economic integration should also be addressed by targeted policies that achieve fairer outcomes, including, for example, redistributive policies or adequate training and educational measures.

## 2 Fiscal rules in the euro area and lessons from other monetary unions

Prepared by Nadine Leiner-Killinger and Carolin Nerlich

*This article compares the fiscal rule framework in the euro area with the frameworks in the fiscally more integrated United States and Switzerland, with the aim of drawing lessons for ways in which fiscal rules could be reformed in European Economic and Monetary Union (EMU). Both the United States and Switzerland have a history of balanced budget rules that help stabilise government debt in individual states/cantons at moderate and broadly comparable levels. The recent shift towards balanced budget rules in the euro area is an important achievement in this direction, and has contributed to better average underlying budgetary positions. Still, the fiscal rule framework needs to be rendered more effective in reducing high levels of government debt and their dispersion across the euro area. Reducing the heterogeneity of government debt positions is also an important prerequisite for setting up a well-governed common macroeconomic stabilisation function at the centre of EMU in case of deep economic crises. This in turn would help to contain the procyclicality of fiscal rules at the country level.*

### 1 Introduction

**In European Economic and Monetary Union (EMU), the single monetary policy is complemented by fiscal policies that are under the responsibility of national governments.** These budgetary policies are subject to a common set of fiscal rules and country-specific arrangements. After the recent financial and economic crisis, which followed a period of good economic times that were not used sufficiently to build up fiscal buffers, the EU's common fiscal framework was strengthened. Among other things, the measures introduced placed a stronger focus on reducing government debt ratios to sound levels. They also included a fiscal compact, which contains a close-to-balance provision for countries' medium-term budgetary objectives (MTOs). Countries must transpose this into national law, preferably at constitutional level.

**While work to further improve the functioning of EMU continues, progress towards more fiscal integration has so far been limited.**<sup>55</sup> The statement issued following the Euro Summit of October 2014 said that “closer coordination of economic policies is essential to ensure the smooth functioning of the Economic and Monetary Union” and pointed to the importance of preparing “next steps on better economic governance in the euro area”. Subsequently, the “Five Presidents’ Report”, issued in 2015, laid out proposals for completing EMU. It stressed that “Progress must happen [...] towards a Fiscal Union that delivers both fiscal sustainability and fiscal stabilisation”.<sup>56</sup> This reflects the fact that, unlike other monetary unions, EMU is not

<sup>55</sup> Fiscal integration is defined, for the purposes of this article, as the partial transferral of fiscal resources and competences in the area of fiscal policy to the central level of government from the lower levels. Stronger fiscal integration can be expected to eventually result in a system of fiscal federalism (see Section 4).

<sup>56</sup> For details, see Juncker, J.-C., Tusk, D., Dijsselbloem, J., Draghi, M. and Schulz, M., “Completing Europe's Economic and Monetary Union”, European Commission, June 2015.



equipped with a sizeable federal budget. There is thus no separate and centralised budget in place that could be used to support fiscal stabilisation of the euro area economy in deep economic downturns. The Euro Summit of December 2018 mandated the Eurogroup “to work on the design, modalities of implementation and timing of a budgetary instrument for convergence and competitiveness [...]”, but did not ask for work on a central capacity for stabilisation.<sup>57</sup>

**This article aims to draw lessons for the design of fiscal rules in the euro area from the fiscal rule frameworks that are in place in other, fiscally more integrated monetary unions.** Specifically, it looks into the fiscal rules that are in place in the United States and Switzerland, which are examples of monetary unions with a federal structure, fiscal rules at the federal and sub-federal levels and a sizeable budget at the centre. Importantly, these monetary unions differ from the euro area in that they are also political unions, in the sense of being a single nation or federal state.

**The findings show that the increased emphasis in the euro area countries on balanced budget rules has brought EMU closer to the set-up in the United States and Switzerland.** These countries have a long history of balanced budget rules at the sub-federal levels, which has led to, overall, lower and less diverse government debt ratios than in the euro area. To achieve a comparable outcome, the EU’s fiscal framework still needs to be rendered more effective in reducing high national government debt burdens. This would make the countries in question less vulnerable to economic downturns and the euro area as a whole more resilient. However, balanced budget rules may make it more difficult for governments to use fiscal policy in a sufficiently countercyclical manner, particularly in deep economic downturns. In other monetary unions, such rules at the sub-federal levels are accompanied by the possibility to stabilise the economy from the centre or, to a lesser extent, through “rainy day” funds at the sub-federal level.

**This article is structured as follows.** Section 2 takes stock of the main fiscal rules governing fiscal policies in the euro area. It concentrates on the fiscal rules established at the country level and how they are linked with the common EU governance framework. Section 3 describes major fiscal developments since the crisis with a view to identifying whether the strengthening of the fiscal governance framework has had a perceptible impact. Section 4 captures major features of the fiscal rule frameworks that govern budgetary policies in the United States and Switzerland. On the basis of this analysis, Section 5 aims to inform the discussions on how to deepen EMU and how to rectify the shortcomings of the existing fiscal framework. Section 6 concludes.

## 2 Fiscal rules in the euro area

**Fiscal rules are an essential part of the fiscal frameworks needed to achieve sound public finances.** Sustainable fiscal positions are particularly important in a monetary union, as individual countries cannot use monetary and exchange rate policies to respond to country-specific shocks. Furthermore, as the recent European

<sup>57</sup> For details, see the [Statement of the Euro Summit, 14 December 2018](#).

sovereign debt crisis has demonstrated, unsound fiscal positions in one country can lead to spillover effects on others, thereby affecting the monetary union as a whole. Numerical fiscal rules are widely accepted as supporting the achievement of sound fiscal policies and are therefore essential to ensure sustainable public finances. Moreover, their positive impact on public finances can be further strengthened through market discipline (see Box 1). As the experience with the sovereign debt crisis has shown, insufficient compliance with fiscal rules in favourable times may come at a high cost. If fiscal rules allow too little flexibility in recessions, however, they may constrain countries' ability to stabilise their economies during an economic downturn. This is likely to be the case especially for countries that have not built up sufficient fiscal buffers. It is therefore important that fiscal rules ensure that fiscal policies are sufficiently countercyclical over the business cycle.<sup>58</sup> This calls for structural fiscal rules that correct for the impact of cyclical developments. Beyond this, however, some form of effective risk sharing, for example through a fiscal capacity at the centre of a monetary union, appears necessary to combat deep economic recessions.<sup>59</sup>

**The rationale for fiscal rules is well established in the literature.** Their main objective is to constrain the use of policy discretion in order to promote sound budgetary policy-making and to overcome the tendency of governments to allow deficit and debt levels to increase over time (known as the “deficit bias”). Numerical fiscal rules are defined for the purposes of this article as providing a permanent constraint on fiscal policy as expressed in terms of a summary indicator of fiscal performance, such as the government budget deficit, debt or a major budgetary component.<sup>60</sup>

**Fiscal policies in the euro area countries are governed by supranational as well as national fiscal rules.** For example, at the supranational level, the euro area countries are subject to nominal fiscal rules under the EU's Stability and Growth Pact (i.e. the Maastricht Treaty's 3% deficit-to-GDP and 60% government debt-to-GDP limits). They are also required to achieve and maintain their country-specific MTOs, which are defined in terms of the structural balance. The structural balance is a key indicator for the governance framework in the euro area and reflects a country's underlying budgetary position, which filters out the impact of the business cycle and one-off factors on the headline budget balance. Adherence to these supranational fiscal rules is governed by the preventive and corrective arms of the Stability and Growth Pact. Unlike in other monetary unions, such as the United States and Switzerland (see Section 4), the supranational rules apply to national fiscal policies and not to a federal budget. At national level, today's fiscal rules in the euro area are to a large extent determined by the fiscal compact, which entered into force in 2013.<sup>61</sup>

<sup>58</sup> Moreover, it can be argued that fiscal rules may help to build up fiscal space. See for example Nerlich, C. and W. Reuter, “Fiscal Rules, Fiscal Space, and the Procyclicality of Fiscal Policy”, *Finanzarchiv*, Vol. 72, No 4, 2016.

<sup>59</sup> A discussion of the issue of risk sharing and the need for a fiscal capacity goes well beyond the scope of this article. For further insights, see for example the article entitled “Risk sharing in the euro area”, *Economic Bulletin*, Issue 3, ECB, 2018.

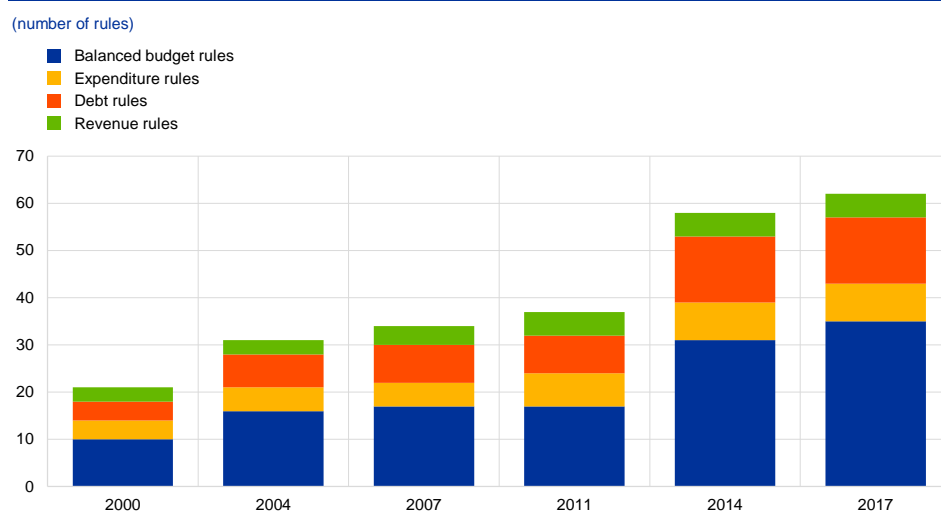
<sup>60</sup> In line with the widely used definition based on Kopits, G. and Szmansky, S., “Fiscal policy rules”, *Occasional Paper Series*, No 162, International Monetary Fund, 1998.

<sup>61</sup> The fiscal compact establishes a floor for the MTO of -0.5% of GDP for countries with debt above 60% of GDP and of -1% of GDP for countries with debt significantly below 60% of GDP. It is binding legislation for the now 24 contracting parties, including all euro area countries. See also the box entitled “Main elements of the fiscal compact”, *Monthly Bulletin*, ECB, March 2012.

The fiscal compact requires countries to have a rule in place to ensure a balanced general government budget in structural terms over the medium term and a correction mechanism to be automatically triggered in the event of significant deviations from the fiscal target. This rule is to be transposed into national legislation, preferably at constitutional level. In addition, several countries have also their own specific rules framework in place.

**Over the past 20 years the number of national fiscal rules in place has approximately tripled in the euro area countries, reflecting in particular an increase in balanced budget rules.** Whereas at the beginning of the century there were only around 20 national fiscal rules altogether in the euro area countries, the number has now increased to 62, according to the European Commission’s fiscal rules database (see Chart 1). Countries have deployed different types of numerical fiscal rules. Balanced budget rules have gained particular prominence among the euro area countries, increasing from ten in 2000 to 35 by 2017 and accounting for now almost 60% of all rules.<sup>62</sup> Debt rules, which existed in only three euro area countries in 2000, have also become more established over the last two decades and now account for roughly one-quarter of all rules. By contrast, expenditure rules and revenue rules play a relatively limited role in most euro area countries.

**Chart 1**  
National fiscal rules in the euro area



Sources: European Commission and ECB calculations.  
Notes: The chart is based on the latest available update (2017) of the European Commission’s fiscal governance database. It includes all national fiscal rules, including those that restrict only part of the general government sector, such as the regional or municipal level.

**The framework of fiscal rules has improved considerably more in qualitative terms than suggested by the increase in the number of rules alone.** In many countries the fiscal rules that were in place in the earlier years of EMU have been exchanged for more sophisticated fiscal rules. In this sense, the fiscal rules have improved in at least five dimensions, i.e. in terms of coverage, strictness, plausibility, monitoring and inherent correction mechanisms. First, regarding coverage, all euro

<sup>62</sup> In addition to a balanced budget rule for general government, several euro area countries, in particular those with a federal structure, also have balanced budget rules in place that restrict only sub-national layers of public finances, including for example municipalities.

area countries now have at least one fiscal rule in place that puts a restriction on public finances at the general government level. This compares with the early years of the euro area, when a large majority of rules constrained only a small fraction of the general government sector and were sometimes linked only to regional or municipal levels. Second, rules have been strengthened in recent years by setting them at constitutional or equivalent level. This, in principle, helps to reduce the risk of short-sighted, discretionary fiscal policies, which are often seen as responsible for the accumulation of high public debt. Third, all euro area countries have at least one fiscal rule in place that is defined in structural terms and thus takes account of the impact of cyclical developments. In earlier years, countries were often constrained only by ceilings in nominal terms. Fourth, the monitoring of compliance with fiscal targets has been strengthened considerably, with independent fiscal authorities, equipped with a relatively broad mandate for surveillance, now established in all euro area countries. Fifth, although practical experience is still scarce, fiscal rules are increasingly supported by more credible enforcement mechanisms, which in some cases would be triggered automatically, for deviations from fiscal targets.

**Most of these improvements in national fiscal rules have taken place during the current decade, as a result of important institutional changes at the supranational level.** Most important in this respect has been the requirement to fully transpose the fiscal compact into national legislation, with the aim of increasing national ownership of the EU governance framework. This can be considered a regime shift compared with the beginning of EMU, when countries' national fiscal rules were designed independently of each other.<sup>63</sup> The Budgetary Frameworks Directive, as part of the “six-pack” legislation of 2011, also required country-specific numerical fiscal rules. Moreover, in 2013 the “two-pack” Regulations specified that independent fiscal institutions should take on a more prominent role in monitoring fiscal rule compliance at national level.

**As a result, national fiscal rules have become more similar across countries and are better aligned with the EU governance framework at supranational level.** All euro area countries now have a balanced budget rule in place restricting the general government budget, following the institutional changes mentioned above. Moreover, the provisions in several euro area countries include an explicit reference to the Stability and Growth Pact. Some countries have de jure even stricter features than foreseen in the Pact, mostly because of a stronger automaticity of their enforcement mechanisms. At the same time, fiscal rule frameworks continue to differ across countries, mainly reflecting national preferences and different federal structures. Differences also relate to the national ownership of the fiscal rules and their effectiveness in terms of compliance.

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<sup>63</sup> In February 2017 the European Commission published its assessment of the fiscal compact transposition, which concluded that most contracting parties had fully transposed the fiscal compact into national legislation, although only 11 at constitutional or comparable level. See [“Report from the Commission presented under Article 8 of the Treaty on Stability, Coordination and Governance in the Economic and Monetary Union”](#), European Commission, 22 February 2017. However, this might be a relatively generous interpretation of the transposition; see the box entitled [“The fiscal compact: the Commission’s review and the way forward”](#), *Economic Bulletin*, Issue 4, ECB, 2017.

## Box 1

### Rules, markets and fiscal discipline in a monetary union

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Prepared by Maximilian Freier and Sarah Ciaglia

**There are in principle two mechanisms for curbing unsound fiscal policies: a rule-based fiscal governance framework and market discipline.** The respective roles of fiscal rules and market discipline are part of the ongoing discussion on the reform of the EMU governance framework.<sup>64</sup> Drawing on the academic literature, this box discusses the two mechanisms and also their potential interaction.

**A rule-based governance framework requires in principle two components, namely rules for fiscal policy and a means for their implementation.** Fiscal rules typically take the form of numerical limits on budgetary aggregates (see Section 2). **Government fiscal policies have to be assessed and their compliance with the fiscal rules ensured.** The effectiveness of this process depends critically on the independence of policy assessment and powers of enforcement.<sup>65</sup> In EMU, the European Commission and the ECOFIN Council conduct surveillance of Member States' budgets with the aim of preventing deficit biases. Additionally, independent fiscal institutions at the national level ("fiscal councils") assess compliance with national fiscal provisions (see Table A, left-hand column).

**The rule-based fiscal framework in EMU has drawn criticism primarily for its lack of enforceability and complexity.** First, where governments retain sovereignty over their fiscal policies, it can be difficult to ensure that they abide by previously agreed rules.<sup>66</sup> Some of the academic literature refers to the Stability and Growth Pact as a "failure", given the significant number of violations of its numerical fiscal rules that have gone unsanctioned.<sup>67</sup> Second, the success of a rule-based framework critically depends on simplicity, particularly when its enforcement depends on public scrutiny and political pressure. In EMU, the Stability and Growth Pact started with simple numerical limits for deficit and debt. The framework was then reformed and a degree of flexibility was included in the implementation of the rules in order to better account for cyclical developments, the cost of structural reforms and crisis-related, exceptional fiscal burdens.<sup>68</sup> This has come at the cost of less transparency and tractability.

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<sup>64</sup> For an example, see Bénassy-Quéré, A., Brunnermeier, M., Enderlein, H., Farhi, M., Fratzscher, M., Fuest, C., Gourinchas, P.-O., Martin, P., Pisani-Ferry, J., Rey, H., Schnabel, I., Véron, N., Weder di Mauro, B. and Zettelmeyer, J., "[Reconciling risk sharing with market discipline: A constructive approach to euro area reform](#)", *CEPR Policy Insight*, No 91, 2018.

<sup>65</sup> See Wyplosz C., "Fiscal Rules: Theoretical Issues and Historical Experiences", in Alesina, A. and Giavazzi, F. (eds.), *Fiscal Policy after the Financial Crisis*, University of Chicago Press, 2013, pp. 495-525, and Reuter, W. H., "[When and why do countries break their national fiscal rules?](#)", *European Journal of Political Economy*, 2018, pp. 1-17.

<sup>66</sup> Few fiscal federations grant their central government direct control over the fiscal policy of their sub-national entities. See Cottarelli, C. and Guerguil, M. (eds.), *Designing a European fiscal union: Lessons from the experience of fiscal federations*, Routledge, 2014.

<sup>67</sup> For examples, see De Haan, J., Berger, H. and Jansen, D.-J., "[Why has the Stability and Growth Pact Failed?](#)", *International Finance*, Vol. 7, No 2, 2004, pp. 235-260, or Ioannou, D. and Stracca, L., "[Have the euro area and EU governance worked? Just the facts](#)", *European Journal of Political Economy*, Vol. 34, 2014, pp. 1-17.

<sup>68</sup> See the box entitled "[Flexibility within the Stability and Growth Pact](#)", *Economic Bulletin*, Issue 1, ECB, 2015, and Prammer, D. and Reiss, L., "The Stability and Growth Pact since 2011: More complex – but also stricter and less procyclical?", *Monetary Policy and the Economy*, Oesterreichische Nationalbank, Q1 2016, pp. 33-53.

**However, empirical analyses find that rule-based fiscal governance frameworks do have a noticeable constraining effect on fiscal policies.**<sup>69</sup> In the absence of robust enforcement mechanisms, fiscal rules rely on broad political and public support. Accordingly, “ownership” of fiscal rules is often identified as an important determinant of their effectiveness.<sup>70</sup> While there have been many violations of the numerical fiscal rules of the Stability and Growth Pact in EMU, average deficits have declined considerably compared with the pre-EMU period. The convergence towards agreed MTOs in many countries or the clustering of public deficits just below the 3% threshold in others provides some indication that Member States have internalised at least part of the EU’s rule-based fiscal governance framework in their fiscal policymaking systems.<sup>71</sup> Recommendations for consolidation under the excessive deficit procedure are translated into government fiscal plans almost in full and are implemented to a substantial extent.<sup>72</sup>

**Turning to market discipline, this is defined as a mechanism by which governments are steered by market price signals towards sound fiscal policies, thus reducing the risk of future debt restructuring.** This mechanism relies on financial markets taking into account fundamentals (current and expected fiscal policies) when determining the credit risk premia included in governments’ financing costs. Governments tend to adjust their budgets to changes in the risk premium paid on their debt.<sup>73</sup> It is widely accepted that for this mechanism to work there has to be – among other conditions, such as open markets and transparency of policies – some likelihood that the debt of governments pursuing unsound fiscal policies will not be repaid (see Table A, right-hand column).<sup>74</sup> In EMU, this is embedded in the “no-bailout clause” (Article 125 of the Treaty on the Functioning of the European Union).

**The market discipline mechanism has been characterised as being “too slow and weak or too sudden and disruptive”.**<sup>75</sup> First, in a monetary union – where close economic integration implies greater spillover effects in a crisis – there could be considerable incentives for the union to come to the aid of a member state at risk of losing market access. If a commitment not to bail out a member state is not fully credible, this could compress risk premia for governments.<sup>76</sup> Second, the literature finds that market interest rates do not necessarily reflect news on fiscal developments in a reliable and consistent manner, and prices can overreact, particularly in times of economic crisis.<sup>77</sup> It is

<sup>69</sup> For a recent metaanalysis, see Heinemann, F., Moessinger, M.-D. and Yeter, M., “[Do fiscal rules constrain fiscal policy? A meta-regression-analysis](#)”, *European Journal of Political Economy*, Vol. 51, 2018, pp. 69-92.

<sup>70</sup> Ter-Minassian, T., “[Fiscal Rules for Subnational Governments: Can They Promote Fiscal Discipline?](#)”, *OECD Journal on Budgeting*, Vol. 6, No 3, 2007.

<sup>71</sup> See Kamps, C. and Leiner-Killinger, N., “Taking stock of the functioning of the EU fiscal rules and options for reform”, *Occasional Paper Series*, ECB, forthcoming, 2019, and “[Report on Public Finances in EMU 2018](#)”, *European Economy Institutional Papers*, No 095, European Commission, 2019.

<sup>72</sup> See De Jong, J. and Gilbert, N., “[Fiscal Discipline in EMU? Testing the Effectiveness of the Excessive Deficit Procedure](#)”, *Working Paper Series*, No 607, De Nederlandsche Bank, 2018.

<sup>73</sup> See Lane, T. D., “[Market Discipline](#)”, *Staff Papers*, Vol. 40, No 1, International Monetary Fund, 1993, pp. 53-88.

<sup>74</sup> See Feld, L.P., Kalb, A., Moessinger, M.-D. and Osterloh, S., “[Sovereign bond market reactions to no-bailout clauses and fiscal rules – The Swiss experience](#)”, *Journal of International Money and Finance*, Vol. 70, 2017, pp. 319-343.

<sup>75</sup> See *Report on economic and monetary union in the European Community*, Committee for the Study of Economic and Monetary Union (“Delors Committee”), April 1989.

<sup>76</sup> See Bordo, M. D., Jonung, L. and Markiewicz, A., “[A Fiscal Union for the Euro: Some Lessons from History](#)”, *CESifo Economic Studies*, Vol. 59(3), CESifo, 2013, pp. 449-488.

<sup>77</sup> See Bergman, M., Hutchison, M.M. and Jensen, S.E.H., “[Do Sound Public Finances Require Fiscal Rules, Or Is Market Pressure Enough?](#)” *Economic Papers*, No 489, European Commission, 2013, and Aizenman, J., Hutchison, M. and Jinjara, Y., “[What is the risk of European sovereign debt defaults? Fiscal space, CDS spreads and market pricing of risk](#)”, *Journal of International Money and Finance*, Vol. 34, 2013, pp. 37-59.

argued that in EMU this may have contributed, on the one hand, to excessively loose fiscal policies before the sovereign debt crisis and, on the other, to overly severe austerity measures during the crisis.<sup>78</sup>

**At the same time, however, the literature in general does find that market discipline effectively reduces the deficit bias of governments.** Research on market discipline in EMU shows that market prices reflect fiscal developments, thereby providing an indication that the no-bailout clause remains credible.<sup>79</sup> Studies also provide evidence that European governments effectively adjust their policies to changes in market prices.<sup>80</sup>

**While rule-based fiscal governance and market discipline are often portrayed as two separate mechanisms, they do in fact affect each other.** Typically, the literature finds that the two mechanisms reinforce each other.<sup>81</sup> For example, fiscal rules can help governments to credibly commit to fiscal targets and thus reduce market interest rates on public debt.<sup>82</sup> Moreover, the assessment of fiscal developments in the context of the fiscal governance mechanism may provide useful information to market participants for the pricing of sovereign risks.<sup>83</sup> Vice versa, higher market interest rates as a result of higher credit risk would, all else being equal, lead to a deterioration of a fiscal position. This may make it more difficult for countries to comply with the provisions of the governance framework.

**In conclusion, both rule-based fiscal governance frameworks and market discipline appear to contribute to the constraints on fiscal policies in EMU.** However, both mechanisms have limitations and vulnerabilities. Against this background, institutional changes to EMU should be carefully assessed with regard to their impact on the governance framework and the market disciplining mechanism.

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<sup>78</sup> See De Grauwe, P. and Ji, Y., “[Mispricing of Sovereign Risk and Macroeconomic Stability in the Eurozone](#)”, *Journal of Common Market Studies*, Vol. 50, No 6, 2012, pp. 866-880, and Pisani-Ferry, J., *The Euro Crisis and Its Aftermath*, Oxford University Press, 2014.

<sup>79</sup> See Bernoth, K., von Hagen, J. and Schuknecht, L., “[Sovereign risk premiums in the European Government Bond Market](#)”, *Journal of International Money and Finance*, Vol. 31, No 5, 2012, pp. 975-995.

<sup>80</sup> See Rommerskirchen, C., “[Debt and Punishment: Market Discipline in the Eurozone](#)”, *New Political Economy*, Vol. 20, No 5, 2015, pp. 752-782. See also Afflatet, N., “[Public debt and borrowing: Are governments disciplined by financial markets?](#)”, *Cogent Economics & Finance*, Vol. 4, No 1, 2016.

<sup>81</sup> See Manganelli, S. and Wolswijk, G., “[Market Discipline, Financial Integration and Fiscal Rules: What Drives Spreads in the Euro Area Government Bond Market?](#)”, *Working Paper Series*, No 745, ECB, 2007.

<sup>82</sup> A large number of empirical studies find that the adoption of numerical fiscal rules indeed reduces government borrowing costs. See Heinemann, F., Osterloh, S. and Kalb, A., “[Sovereign risk premia: The link between fiscal rules and stability culture](#)”, *Journal of International Money and Finance*, Vol. 41, 2014, pp. 110-127; Iara, A. and Wolff, G.B., “[Rules and risk in the Euro area](#)”, *European Journal of Political Economy*, Vol. 34, 2014, pp. 222-236; Thornton, J. and Chrysovalantis, C., “[Fiscal rules and government borrowing costs: International evidence](#)”, *Economic Inquiry*, Vol. 56, No 1, 2018, pp. 446-459; and Afonso, A. and Jalles, J.T., “[Fiscal Rules and Government Financing Costs](#)”, *Fiscal Studies*, Vol. 40, No 1, 2019.

<sup>83</sup> For example, the opening of an excessive deficit procedure has been found to have a significant upward effect on sovereign spreads. See Kalan, F.D., Popescu, A. and Reynaud, J., “[Thou Shalt Not Breach: The Impact on Sovereign Spreads of Noncomplying with the EU Fiscal Rules](#)”, *Working Paper Series*, No 18/87, International Monetary Fund, April 2018.

**Table A****Mechanisms for fiscal discipline in EMU**

	<b>Rule-based governance framework</b>	<b>Market discipline</b>
<b>European level</b>	<p><b>Fiscal rules of the Stability and Growth Pact:</b> nominal deficit and debt limits, MTOs, expenditure benchmark and debt rule</p> <p><b>Fiscal surveillance under the Stability and Growth Pact:</b> the preventive arm and corrective arm (excessive deficit procedure) of the Pact administered in the European Semester by the European Commission and the ECOFIN Council</p> <p><b>Possible impediment to effectiveness:</b> effective enforcement/no sanctioning mechanisms</p>	<p><b>No-bailout clause:</b> Article 125 of the Treaty on the Functioning of the European Union</p> <p><b>Possible impediment to effectiveness:</b> potential need for intergovernmental support to ensure smooth functioning of EMU in times of crisis</p>
<b>Member State level</b>	<p><b>Fiscal compact rules:</b> balanced budget rule, benchmark for government debt reduction</p> <p><b>Surveillance under the fiscal compact:</b> monitoring of compliance with rules, endorsement of budgetary and economic projections by national fiscal councils</p> <p><b>Possible impediment to effectiveness:</b> lack of political ownership, effective enforcement/sanctioning mechanisms lacking in some cases</p>	<p><b>Open capital market:</b> free movement of capital is one of the key elements in the EU Single Market</p> <p><b>Information on government finance statistics:</b> Eurostat reporting obligations</p> <p><b>Possible impediment to effectiveness:</b> lack of comparable and coherent data collection or provision</p>

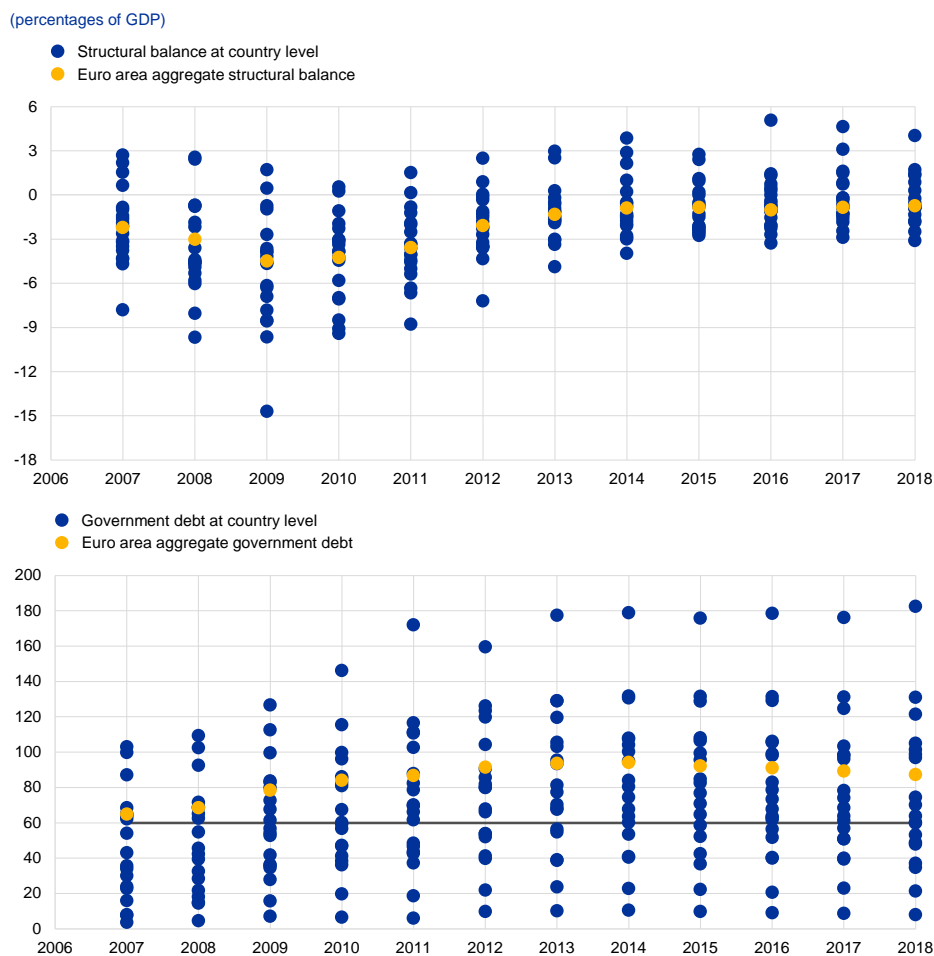
### 3 Fiscal developments in the euro area

**Since the peak of the financial crisis in 2009, the euro area as a whole has made significant progress towards restoring sound fiscal positions, which has coincided with the steps taken to strengthen the framework of fiscal rules.** From its peak in 2009 at 4.5% of GDP, the euro area aggregate structural deficit declined to 0.7% of GDP in 2018 (see Chart 2). The euro area as a whole has thus moved to an underlying budgetary deficit that comes very close to the floor of 0.5% of GDP set by the fiscal compact. This has been an important contribution to bringing government debt in the euro area onto a downward trajectory. Indeed, the euro area aggregate debt-to-GDP ratio gradually declined from its peak of 94.2% of GDP in 2014 to 86.9% of GDP in 2018. It remains, however, far above its pre-crisis level (65% of GDP in 2007).



**Chart 2**

**Dispersion of structural budget balances and government debt in the euro area**



Sources: European Commission Economic Forecast, Autumn 2018, and ECB calculations.

**These favourable trends for the euro area as a whole mask very heterogeneous fiscal developments at the country level.** On the one hand, an increasing number of countries are assessed as recording broadly sound fiscal positions. In 2018, on the basis of the European Commission’s 2018 Autumn Economic Forecast, 11 countries are expected to have achieved structural balance positions that are in line with the lower bound set by the fiscal compact (see Chart 3). This compares with only three countries prior to the crisis in 2007.<sup>84</sup> This favourable trend may be taken as an indication that the increasing focus on balanced budget rules at the country level is having a first perceptible impact.<sup>85</sup> On the other hand, as shown in Chart 2, a number of euro area countries continue to record large structural budget deficits. These countries remain far from their country-specific MTOs and the floor enshrined in the fiscal compact, which makes it more difficult to bring their high government debt ratios down to lower levels.

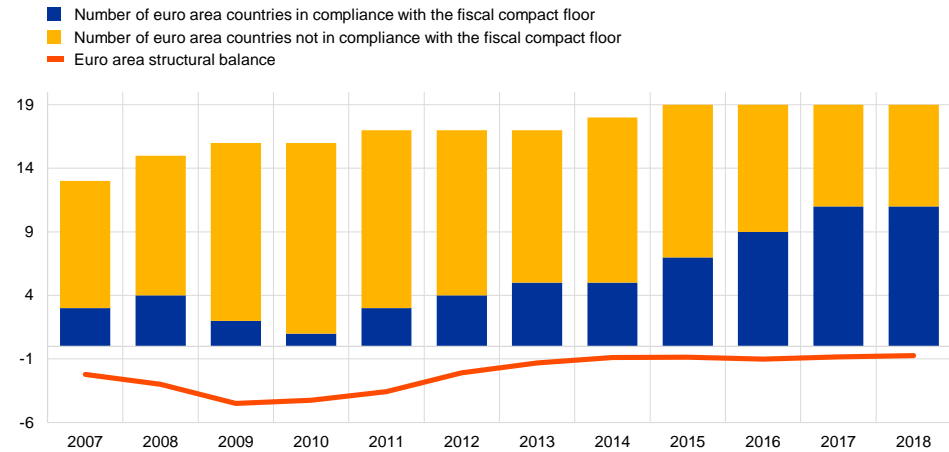
<sup>84</sup> The fiscal compact only entered into force in 2013.

<sup>85</sup> It should be acknowledged, however, that the structural balance may overstate the country’s underlying budgetary situation somewhat as it may reflect extraordinary revenue growth over and above the long-term trend.

### Chart 3

#### Structural balances vis-à-vis the floor enshrined in the fiscal compact

(structural balance: percentages of GDP)



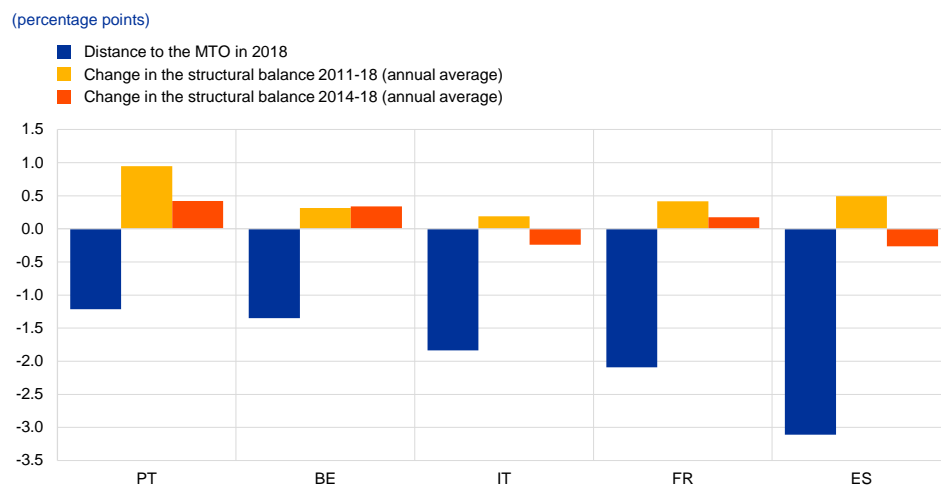
Sources: European Commission Economic Forecast, Autumn 2018, and ECB calculations.

Notes: The chart shows the number of countries whose structural balance would be in compliance with the floor set in the fiscal compact. The blue bars show the number of countries with either a government debt-to-GDP ratio above 60% and a structural balance above a floor of -0.5% of GDP or with a government debt-to-GDP ratio below 60% and a structural balance above a floor of -1%. The yellow bars depict the number of countries satisfying neither of these conditions. The number of countries complying with their country-specific MTOs may be different, however, as these can be set at levels that are more demanding than the provisions of the fiscal compact.

As can be seen from Chart 4, in some countries with high government debt (i.e. Belgium, France and Italy), structural deficits still remain far from their MTOs because, during the period from 2011 to 2018, they declined on average by less than the 0.5% of GDP benchmark adjustment foreseen in the Stability and Growth Pact. While in 2011-13 all the countries shown in Chart 4 (apart from Belgium) achieved an adjustment which was, amid financial market pressure, greater than the benchmark requirement, in more recent years none of the countries shown achieved the required adjustment. Consequently, these countries were not building the buffers that would allow them to avoid fiscal tightening in the next downturn. This can have an impact on the resilience of the euro area as a whole.

### Chart 4

#### Structural budget balances in countries not at their MTO and with government debt-to-GDP ratios above 90%

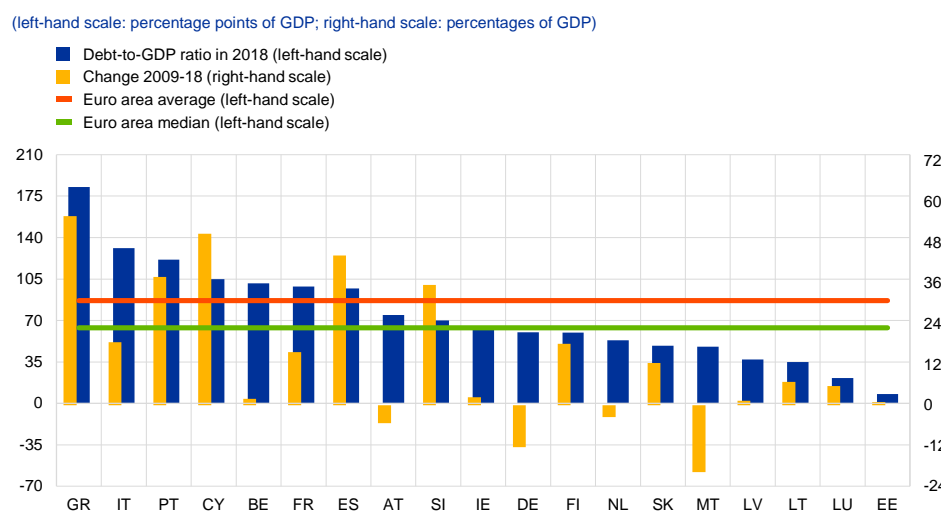


Sources: European Commission Economic Forecast, Autumn 2018, and ECB calculations.

**Heterogeneity in euro area countries' fiscal positions is also visible in the dispersion of government debt-to-GDP ratios.** This has increased to levels markedly above those seen ahead of the crisis (see Chart 2). In fact, since 2009 an increasing number of euro area countries have posted government debt-to-GDP ratios of above the Maastricht Treaty's 60% reference value. While, by 2018, some countries' debt ratios had declined to below 60% of GDP again, a number continue to record high government debt ratios of above 90% of GDP (see Chart 5). Ensuring convergence towards sound fiscal positions across countries and thus reducing vulnerabilities to shocks is a prerequisite for resilience in the euro area, and thus an important factor to support a fiscally more integrated EMU.

### Chart 5

#### Developments in government debt



Sources: European Commission Economic Forecast, Autumn 2018, and ECB calculations.

## 4 Fiscal frameworks in other monetary unions

### Comparing the public finances and fiscal frameworks of the euro area, the United States and Switzerland reveals some similarities but also important differences.

As in the euro area countries, balanced budget rules at the sub-federal level are well established in both the US states and the Swiss cantons, although they have been in place for a much longer period than in the euro area. However, the size and role of the central budget differs substantially between the euro area on the one hand and Switzerland and the United States on the other. This includes the stabilisation function of the central budget, which can limit the procyclicality of fiscal rules at the lower level. A better understanding of the institutional settings in these two monetary unions and how they compare with the situation in the euro area may therefore provide insights, particularly in view of the ongoing discussions on how to deepen fiscal integration in EMU. This section therefore takes a closer look at how public finances are governed in the United States and Switzerland, with a particular focus on the design, strictness and enforcement mechanisms of fiscal rules at sub-federal level.

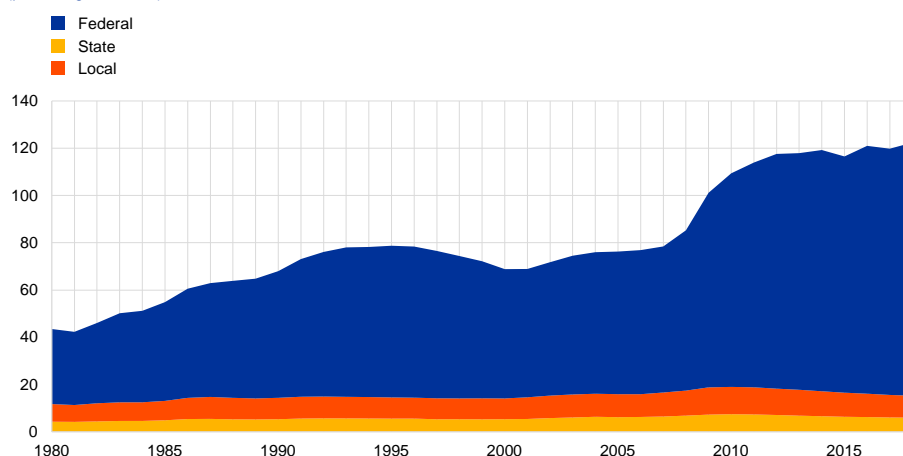
### Public finances in the United States and Switzerland differ from those in the euro area.

In the United States, most of the overall general government debt, which has continuously increased over the past decades, has been generated at the federal level (see Chart 6). In Switzerland, the federal level is responsible for roughly half of total public debt, which peaked in 2005 (see Chart 7). In the euro area, there is no equivalent at the central level besides the EU budget, which is very limited in size and also has a very limited borrowing capacity. Moreover, neither in the United States nor in Switzerland is public debt at the sub-federal level as heterogeneous as across countries in the euro area (see Chart 8 and Chart 5).

#### Chart 6

##### Decomposition of general government debt in the United States, 1980-2018

(percentages of GDP)

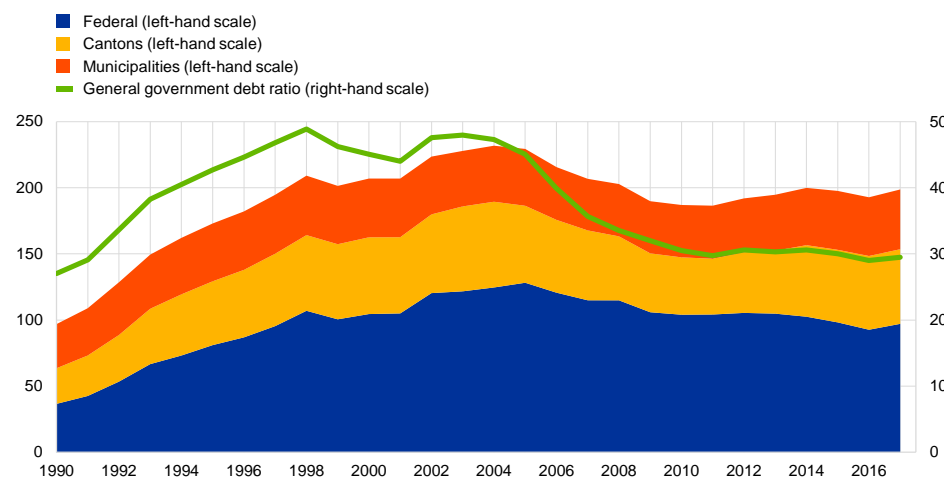


Sources: Haver Analytics and ECB calculations.

## Chart 7

### Decomposition of general government debt in Switzerland, 1990-2017

(left-hand scale: CHF billions; right-hand scale: percentages of GDP)



Sources: Swiss Federal Statistical Office and ECB calculations.

Notes: The data on the general government debt-to-GDP ratio include the debt accumulated by the social security systems.

### Three institutional aspects seem to play a particular role in explaining the differences in public finances across the monetary unions.

First, differences relate to fiscal federalism, its main purpose and how strongly it is established in the respective monetary unions.<sup>86</sup> In the United States, fiscal federalism mainly takes the form of countercyclical stabilisation policies, from the centre to the state level. The US states can rely on some public risk sharing in the form of temporary transfers from the federal budget in the event of idiosyncratic shocks, complemented by “rainy day” funds established at state level (see also Box 2).<sup>87</sup> In Switzerland, fiscal federalism is well established in the form of a permanent transfer system between the centre and economically less strong cantons. In the euro area, however, fiscal federalism is very limited. The EU budget has very limited resources (of around 1% of total GDP), which are mainly used for redistribution purposes in the form of EU cohesion funds to foster economic convergence in poorer regions. Public risk sharing is still limited to very specific situations under strict conditionality, while there are no funds available at central level to provide a countercyclical stabilisation function for the Member States in the event of severe common or asymmetric shocks. Second, in the US states and the Swiss cantons public finances are also strongly influenced by an effective no-bailout clause.<sup>88</sup> Third, differences relate to the fiscal rule framework for the various layers and how effectively it works as a disciplinary device. While these three aspects are

<sup>86</sup> Fiscal federalism is concerned with the way the various public functions are assigned to different levels of government and how the relevant fiscal instruments are distributed to enable these functions to be carried out. Depending on the design of fiscal federalism, it can fulfil very different functions, such as providing redistribution, stabilisation or risk sharing among the sub-federal entities. See also Darvas, Z., “Fiscal federalism in crisis: lessons for Europe from the US”, Bruegel Policy Contribution, Issue 7, 2010.

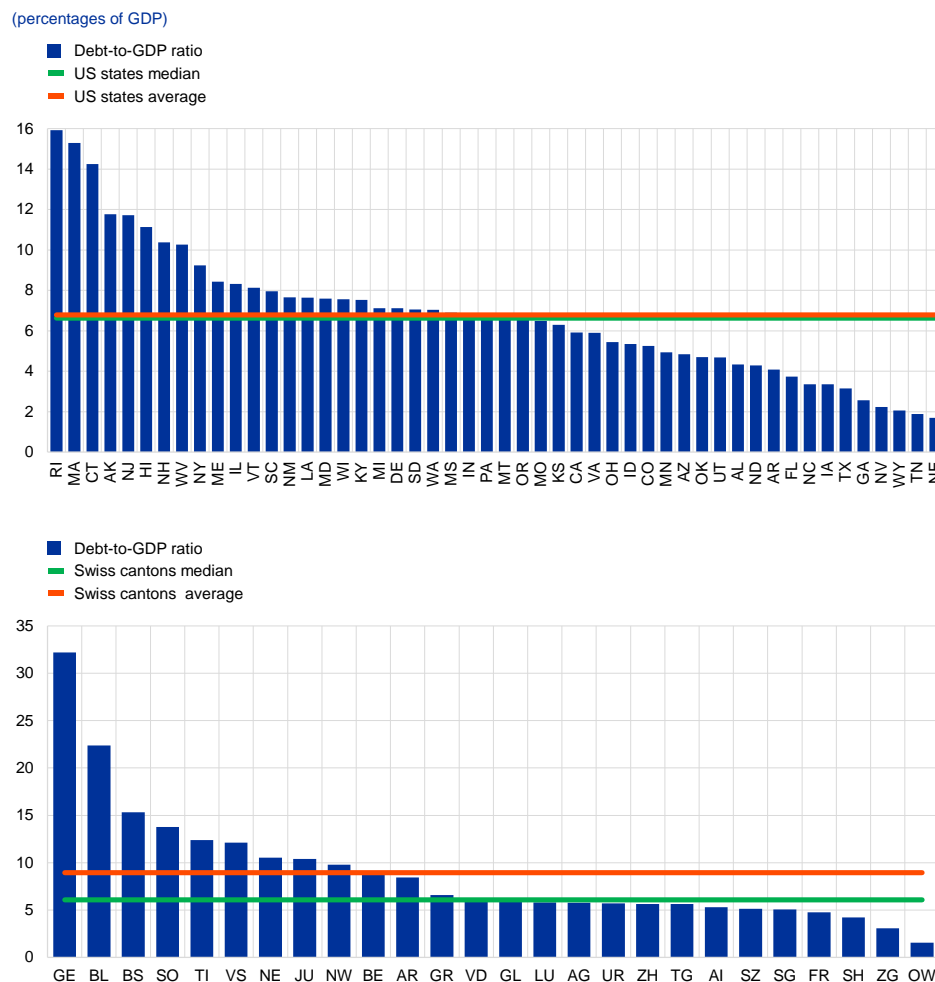
<sup>87</sup> In the United States, 13% of state-specific shocks to GDP can be expected to be smoothed by the federal tax-transfer and grant system, compared with 62% through private risk-sharing instruments (i.e. market transactions). See Asdrubali, P., Sorensen, B., and Yosha, O., “Channels of Interstate Risk Sharing: United States 1963-1990”, *Quarterly Journal of Economics*, Vol. 111, No 4, 1996.

<sup>88</sup> In Switzerland, the no-bailout clause took effect in 2003 after the municipality of Leukerbad defaulted on its debt and the canton of Valais was not held responsible. In the United States, no state has defaulted on its debt since the default of Arkansas in 1933.

largely interrelated, and therefore all affect the cyclicality of fiscal policies, the focus in the following will be on the fiscal rules.

**Chart 8**

Dispersion of public debt in US states and Swiss cantons, 2016



Sources: Haver Analytics, Swiss Federal Statistical Office and ECB calculations.  
 Notes: The charts show the 2016 government debt-to-GDP ratio of the 50 US states, excluding debt at local level, and the 26 cantons, excluding debt of municipalities.

**The fiscal rules in the US states are not imposed by the centre and are therefore relatively heterogeneous.** The US states have full discretion in the way they set their fiscal rules. Although balanced budget rules are in place in almost all 50 states, they differ in terms of stringency. A few states have very stringent balanced budget rules which prohibit deficits being carried over into the next budget year. Other states allow more leeway during the budgetary process, for example in form of escape clauses, and compliance with rules is enforced rather loosely. In some US states the balanced budget rules just need to be complied with ex ante, while in others investment expenditure can be deducted from nominal targets, thereby providing accounting leeway. Fiscal targets are set in either annual or biennial terms. Public finances in the US states are also disciplined by a no-bailout clause, while fiscal stabilisation from the

centre to the states and rainy day funds help as countercyclical devices.<sup>89</sup> At the federal level, the government's borrowing capacity is restricted by a nominal debt limit, which can, however, be lifted upon parliamentary approval.

**In Switzerland, the fiscal rules, which are autonomously set by the cantons, are relatively diverse.** Most of the 26 cantons have balanced budget rules in place, some of which are established at constitutional level. Only a few cantons target their total cantonal budgets, while in several cantons public investment is explicitly excluded.<sup>90</sup> Some cantons strictly enforce compliance with their fiscal targets. For example, if the budget deficit exceeds a certain threshold, they are obliged to either increase taxes (e.g. in St. Gallen) or to specify future expenditure cuts ex ante. Rule compliance is partly also promoted through direct democratic instruments of budget control, such as referendums. Other cantons, however, have fiscal rules that are less stringent, for example with broadly defined escape clauses. At the federal level, fiscal discipline is ensured through a strict debt brake established in 2003 at constitutional level, which applies to the general government sector as a whole.

**The differences in the fiscal rule frameworks of the euro area, the United States and Switzerland can be captured by a rule stringency index.** As shown in Chart 9, this is a simple composite index based on publicly available indices for the three monetary unions. These are, for Switzerland, the index developed by Kirchgässner and Feld, for the US states the index developed by Hou and Smith and further by Mahdavi and Westerlund, and for the euro area countries the index of the European Commission.<sup>91</sup> As these studies use their own categorisation, it is necessary to translate them into a single scoring system. For reasons of simplicity and also owing to a lack of publicly available information at the same granular level across regions, the composite index shown here is closest to the index developed by Kirchgässner and Feld. Thus the composite index is derived from three criteria: (i) whether a balanced budget rule is in place, (ii) whether there is clear intra-year monitoring of the budget, and (iii) whether there is a stringent and credible enforcement mechanism. Each criterion is given a score of one, indicating that the feature is present, or zero, if not. The overall score is then found, which can be strong, medium, weak or not existent. The higher the score, the more stringent the rule.

**Overall, countries' fiscal rules in the euro area seem to be more stringent than the sub-federal rules in the other two monetary unions.** On the basis of the composite index, 40% of the fiscal rules in the euro area countries are very stringent,

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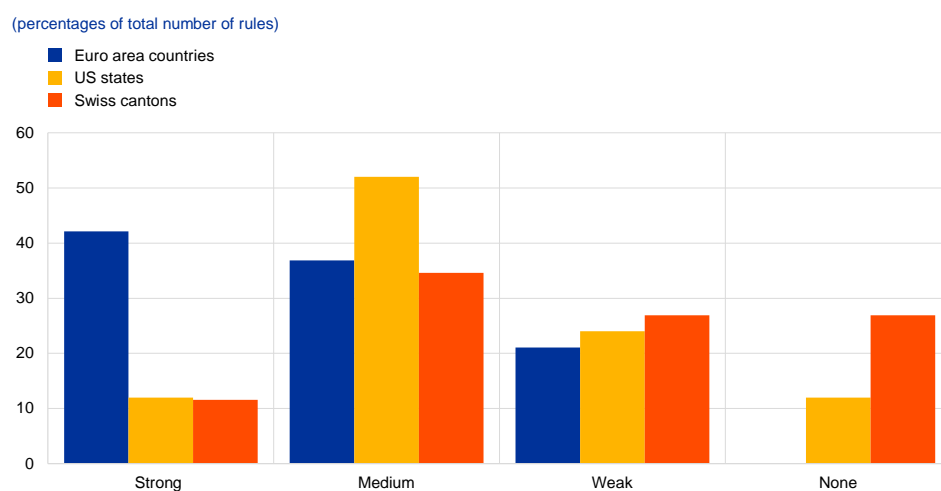
<sup>89</sup> Several empirical studies show that the fiscal stimulus provided at federal level essentially offset the procyclical tightening embedded in US states' rules in 2009. See for example Aizenman, J. and Pasricha, G., "Net Fiscal Stimulus during the Great Recession", *Review of Development Economics*, Vol 17(3), 2013, pp. 397-413; and Blöchliger, H. et al., "Fiscal policy across levels of government in times of crisis", *Working Paper*, No 12, Organisation for Economic Co-operation and Development, 2010. For the role of rainy day funds, see Fatas, A. and Mihov, I., "The macroeconomic effects of fiscal rules in the US states", *Journal of Public Economics*, Vol. 90(1-2), 2006, pp. 101-117.

<sup>90</sup> See Burret, H. and Feld, L., "Effects of Fiscal Rules – 85 Years' Experience in Switzerland", *CESifo Working Paper Series*, No 6063, CESifo, 2016.

<sup>91</sup> See Feld, L. and Kirchgässner, G., "On the Effectiveness of Debt Brakes: The Swiss Experience", in Neck, R. and J.-E. Sturm (eds.), *Sustainability of Public Debt*, MIT Press, Cambridge, 2008; Hou, Y. and Smith, D., "Do state balanced budget requirements matter? Testing two explanatory frameworks", *Public Choice*, Vol. 145, 2010; Mahdavi, S. and Westerlund, J., "Fiscal stringency and fiscal sustainability: Panel evidence from the American state and local governments", *Journal of Policy Modeling*, Vol. 33, 2011; and European Commission, "Fiscal rules database", 2017.

which is a considerably higher score than for the US states or the Swiss cantons (Chart 9). In the US states, more than half of the fiscal rules in place have a medium stringency level, while those in the Swiss cantons seem to be less binding. However, the results need to be interpreted with caution as the various indices are not necessarily fully comparable since they use different criteria and considerable judgement.<sup>92</sup>

**Chart 9**  
Comparison of fiscal rule stringency index



Source: ECB calculations.

Notes: The index is based on, for the euro area, the European Commission's fiscal rules database (2017), for the United States, the fiscal rules index by Hou and Smith (2010) as well as Mahdavi and Westerlund (2011), and for Switzerland, the index by Feld and Kirchgässner (2008). It covers rules at sub-federal levels in the United States and Switzerland, and at national level in the euro area.

**At first sight, the above finding that fiscal rules in the euro area are more stringent than those in other monetary unions might be surprising.** Public debt in the euro area countries is on average higher and more heterogeneous than the sub-federal debt-to-GDP ratios in the United States and Switzerland. However, in contrast to the euro area countries, public finances in the US states and the Swiss cantons are able to benefit from a sizeable fiscal budget at the centre and, in the United States, rainy day funds that facilitate more countercyclical fiscal policies. Moreover, the results for the euro area can be seen as a first indication that the considerable institutional changes implemented in recent years are bearing fruit, even though their positive impact on public finances has not yet become fully visible. Furthermore, as the no-bailout clause is seen as being effective at the sub-federal levels in the United States and Switzerland, this may also explain why both federations allow themselves to have less stringent rules.

<sup>92</sup> In fact, assessments even seem to differ of the rules within a monetary union. For the United States, for example, studies differ in their assessment of the strictness of the states' rules. Moreover, the studies used for the index have different reference dates: for the United States the data are from 2006, for Switzerland from 2008, and for the euro area from 2017. However, in contrast to the euro area, changes in the fiscal rule frameworks in the United States and Switzerland have been marginal in recent years.



## Box 2

### Rainy day funds – evidence from US states

Prepared by Sebastian Hauptmeier, Nadine Leiner-Killinger and Carolin Nerlich

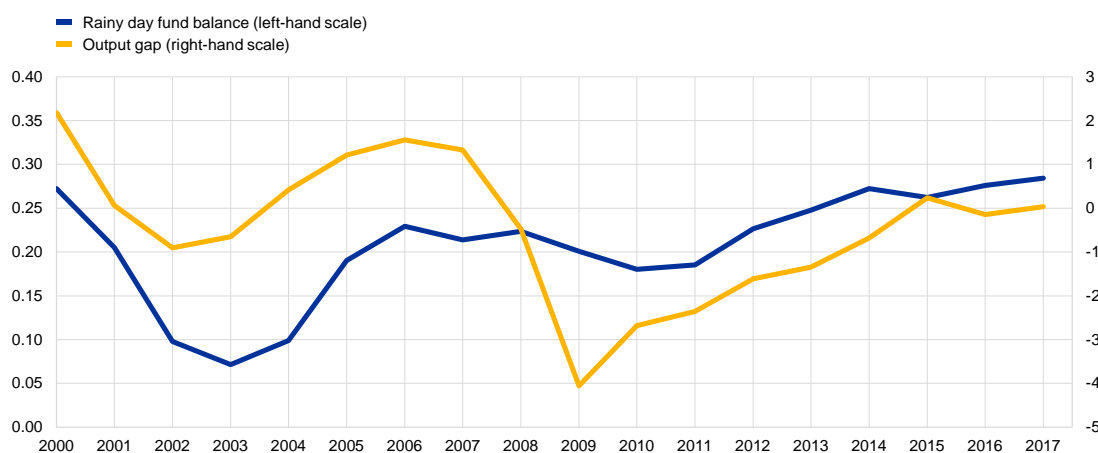
**Fiscal rules are often criticised for being procyclical and for not providing sufficient incentives to build up fiscal buffers.** During a recession, rules may provide insufficient fiscal room for manoeuvre to stabilise the economy. One possibility for smoothing the impact of the business cycle on fiscal positions is to create a “rainy day” fund. This is a fund dedicated to stabilising the budget by saving funds in economic good times and depleting them in economic weak times. This box looks at the experience in the United States with rainy day funds and a possible way forward for the euro area.

**In the United States, almost all states are equipped with some form of rainy day fund as a countercyclical tool to complement the balanced budget requirements.** The availability of such budget stabilisation funds is seen as important given that state governments – when faced with an economic downturn and related shortfalls on the revenue side of their budgets – have limited options for stabilising the economy, as their ability to borrow is constrained. Indeed, increasing taxes or cutting spending in a procyclical manner would risk worsening a downturn. The rainy day funds constitute an institutional feature of the budgetary procedures at state level. Their average size is relatively small. Over the period 2000-17, the funds accumulated in rainy day funds averaged only around 0.2% of US GDP, and peaked in 2017 at close to 0.3% of GDP. Chart A shows the evolution of aggregate US state rainy day fund balances over 2000-17 against developments in the output gap (as a proxy for national cyclical conditions). Indeed, as expected, the aggregated rainy day funds balance follows a roughly countercyclical pattern, in the sense that dissaving occurs when the output gap is worsening and vice versa. It is noteworthy that available funds were used almost in full during the 2001 recession and built up again thereafter, while aggregate funds dropped much less significantly during the Great Recession. Given the relatively small size of the funds, they are typically only sufficient to smooth normal cyclical fluctuations; more severe recessions require additional support from the federal budget. During the Great Recession significant funds derived from the American Recovery and Reinvestment Act at the federal level were used to further compensate state budget shortfalls.

#### Chart A

##### US state rainy day fund balances

(percentages of GDP)



Sources: National Association of State Budget Officers, European Commission (AMECO database) and ECB calculations.

**While the governance structure of rainy day funds differs widely among US states, some common patterns can be observed.** As indicated in Table A, all rainy day funds are subject to specific conditions regarding the build-up and withdrawal of funds. 44 states have rules in place that make the deposit of funds in the rainy day funds dependent on a number of specified conditions; 20 states base them on measures of volatility (e.g. revenue volatility deriving from cyclical developments related to oil or housing). Nine states make the withdrawal of funds dependent on economic conditions, six on revenue volatility and two on both. Eleven states foresee a fixed period for repayment.

**Table A**  
Rainy day funds in US states – main characteristics

Rules governing the deposit of funds in the rainy day fund		
Defined deposit rules	of which tied to volatility	Provisions on repayment to rainy day fund
44	20	11
Withdrawal of funds from the rainy day fund tied to:		
volatility of revenues	economic conditions	both
6	9	2

Source: See Bailey, S. et al. "When to Use State Rainy Day Funds", Pew Charitable Trusts, 2017.

**In the euro area, only one country has so far decided to introduce a rainy day fund.** Ireland set up a rainy day fund in 2018.<sup>93</sup> The intention is to place around €500 million per annum (i.e. 0.2% of projected 2019 GDP) over the period 2019-21 in the fund. While Germany does not operate a rainy day fund, the German debt brake is conceptually comparable.<sup>94</sup> The IMF has suggested setting up a rainy day fund for the euro area as a whole to help to smooth business cycles in the event of both country-specific and common economic shocks.<sup>95</sup>

## 5 Lessons for the reform of fiscal rules in the euro area

**With the increase in balanced budget rules, the fiscal rule framework in the euro area has come closer to that in the United States and Switzerland, but important differences remain.**

The increased reliance in the euro area countries on balanced budget rules will eventually help to bring government debt ratios to lower and less divergent levels. Though the reflection of the fiscal compact in national rules is still recent, it is thus a major achievement that should ultimately help to increase the resilience of the euro area. At the same time, an important lesson from the United States and Switzerland is that their on average much lower debt ratios at sub-federal level and lesser dispersion are the result not only of a much longer history of balanced

<sup>93</sup> See Department of Finance, "Rainy Day Fund – Consultation Paper", October 2017; see for details also Casey, E. et al. "Designing a Rainy Day Fund to Work within the EU Fiscal Rules", *Working Paper Series*, No 6, Irish Fiscal Advisory Council, 2018.

<sup>94</sup> Surpluses and shortfalls vis-à-vis the constitutional structural balance rule are recorded in a virtual control account, which is intended to provide flexibility in the presence of cyclical swings.

<sup>95</sup> See Arnold, N.G., Barkbu, B.B., Eif Ture, H., Wang, H. and Yao, J., "A Central Fiscal Stabilization Capacity for the Euro Area", *Staff Discussion Notes*, No 18/03, International Monetary Fund, 2018.

budget rules but also of a degree of risk sharing and a fiscal stabilisation function at the central level.

**The lessons for EMU are thus twofold.** First, the fiscal framework needs to be rendered more effective in ensuring sound fiscal positions and reducing high levels and dispersion of government debt ratios across the euro area. As shown in Section 3, while the euro area as a whole can be considered to have achieved an underlying budgetary position of almost close to balance, some countries with high debt remain distant from such an outcome. This needs to be addressed. Second, reducing the heterogeneity of public debt positions across euro area countries would also be an important prerequisite for setting up a common macroeconomic stabilisation function at the centre in case of deep economic crises. This, in turn, would help to contain the procyclicality of fiscal rules at the country level. Against this background, the review of the “six-pack” legislation, scheduled for this year, will provide an opportunity to consider adjustments to the framework that could be conducive to further fiscal integration in the euro area.

**Looking at the first lesson, shortcomings in the current application of the fiscal rules as set by the Stability and Growth Pact need to be remedied.** As shown in Section 3, some countries are not building up the buffers that would allow them to avoid fiscal tightening in a downturn. This can have an impact on the resilience of the euro area as a whole, notably in the light of the absence of a central fiscal capacity.<sup>96</sup>

**First, under the Stability and Growth Pact's corrective arm, underlying budgetary positions need to improve faster than is currently the case.** The “six-pack” legislation introduced annual nominal headline deficit targets under the excessive deficit procedure. If a country's economic growth outpaces that foreseen in the excessive deficit procedure recommendation, it can achieve the nominal headline deficit targets with a smaller or even without the prescribed structural effort. These “nominal strategies” help to explain why, for example, Spain and France delivered a structural effort below the 0.5% of GDP benchmark requirement in the period following the 2012-13 recession (see Chart 4). Such developments harbour a risk that countries will leave an excessive deficit procedure with elevated structural deficit and debt ratios that reduce their potential to support the economy during the next downturn. This would suggest reducing the emphasis on the nominal headline deficit targets under the Stability and Growth Pact's corrective arm.

**Second, the Stability and Growth Pact's debt rule should be reviewed to ensure a reduction of high government debt.** The debt rule rightly takes account of low nominal growth and inflation as relevant factors, as these render compliance with it procyclical in a downturn. However, the current application of the rule needs to be addressed where it treats countries' compliance with the preventive arm of the Stability and Growth Pact as the core mitigating factor. Specifically, countries that do not and/or are not expected to deliver the full structural effort towards the MTO under the preventive arm are currently still considered as being broadly compliant with the preventive arm and therefore compliant with the debt criterion. Such broad instead of

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<sup>96</sup> On 22 January 2019 the ECOFIN Council approved recommendations for the conduct of fiscal policies in the current year, highlighting the need to “rebuild fiscal buffers, especially in euro area countries with high levels of public debt”.

full compliance with the Stability and Growth Pact delays the needed progress towards the MTO.<sup>97</sup>

**Third, under the Stability and Growth Pact’s preventive arm, the application of flexibility needs to be reviewed to avoid an excessive slowdown in progress towards MTOs.**<sup>98</sup> According to the common position on flexibility, which was endorsed by the ECOFIN Council in early 2016, budgetary adjustment requirements can be reduced in exchange for additional structural reforms and government investment, among other things. However, it should be ensured that the additional leeway granted is reduced if structural reforms are reversed or government investment is more limited than initially planned.

**Turning to the second lesson, the experience in the United States and Switzerland suggests that rules at the level of individual euro area countries should be supported by some central stabilisation.** Over the past 15 years the fiscal rule framework in the euro area has been reformed, with, overall, a shift away from nominal targets and towards a stronger recognition of the impact of the business cycle on budgetary outcomes.<sup>99</sup> Provided the good economic times are used effectively to build up buffers, this helps to provide stabilisation in downturns. In this respect, countries could benefit from enhancing their institutional toolbox by, for example, creating rainy day funds that could limit procyclical fiscal policies. Over the longer horizon, however, setting up a well-governed central stabilisation facility would support adherence to the strengthened fiscal framework in the euro area in deep downturns. As the overall moderate and broadly comparable government debt ratios at the state/canton level in the United States and Switzerland show, reducing high levels and the heterogeneity of government debt positions across the euro area countries appears to be an important prerequisite in this respect.

**Generally, as the experiences in the United States and Switzerland have shown, once government debt ratios are relatively low and less divergent, countries might be able to afford to set their fiscal rules more autonomously.** Experience in other monetary unions suggests that market discipline can reinforce the ownership of sub-federal fiscal rules. Moreover, sub-federal entities have found effective and credible fiscal rules to be in their long-term interest because unsound fiscal policies – resulting in excessively high debt levels – place a burden on future generations by increasing financing costs in the economy and undermining growth and employment. This has also led sub-federal entities to take strong ownership of their (self-imposed) fiscal rules.

**Overall, experiences with fiscal rule frameworks in other fiscally more integrated monetary unions provide insights for reforms in EMU, but differences will and should remain.** As also the high and rising government debt

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<sup>97</sup> The broad application of “relevant factors” needs to be reviewed. See the article entitled “Government debt reduction strategies in the euro area”, *Economic Bulletin*, Issue 3, ECB, 2016.

<sup>98</sup> Similar views are expressed in “Annual Report 2018”, European Fiscal Board, as well as in “Is the main objective of the preventive arm of the Stability and Growth Pact delivered?”, *Special Report*, European Court of Auditors, No 18, 2018.

<sup>99</sup> See Kamps, C. and Leiner-Killinger, N., “Taking stock of the functioning of the EU fiscal rules and options for reform”, *Occasional Paper Series*, ECB, forthcoming, 2019.

ratio at the US federal level shows, what is generally important is that fiscal rules ensure that debt ratios are sound at all levels constituting a monetary union.

## 6 Conclusions

**This article's main findings can be summarised as follows.** A comparison of the fiscal rule framework applicable in euro area countries with that in the fiscally more integrated United States and Switzerland can provide guideposts for completing EMU. Both the United States and Switzerland have a history of balanced budget rules that help stabilise government debt in states and cantons at moderate and not overly divergent levels. The increased emphasis in the euro area on balanced budget rules is an important achievement. The fact that the majority of euro area countries are currently recording underlying budgetary positions that are in line with a balanced budget over the medium term is also a first indication that balanced budget rules have become more effective.

**Still, a number of countries, notably those with high government debt, need to progress further towards their MTOs.** The fiscal rule framework can be rendered more effective in this regard. Generally, if euro area countries build up buffers to avoid fiscal tightening in a downturn, national budgets can fulfil their function as stabilisation tools. Reducing the heterogeneity of debt positions across euro area countries would also be an important prerequisite for setting up a common macroeconomic stabilisation function for deep crises as in other monetary unions, thereby also supporting the single monetary policy.

# Statistics

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## Further information

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

## 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 <sup>1)</sup> (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 <sup>2)</sup> (HICP)
							Total	excluding food and energy					
	1	2	3	4	5	6	7	8	9	10	11	12	13
2016	3.2	1.6	1.8	0.6	6.7	2.0	1.1	1.8	1.3	0.7	-0.1	2.0	0.2
2017	3.8	2.2	1.8	1.9	6.8	2.4	2.2	1.8	2.1	2.7	0.5	1.6	1.5
2018	3.7	3.0	1.4	0.8	6.6	1.8	2.6	2.1	2.4	2.5	1.0	2.1	1.8
2018 Q1	0.9	0.5	0.1	-0.1	1.5	0.4	2.2	1.9	2.2	2.7	1.3	2.2	1.3
Q2	0.9	1.0	0.4	0.5	1.7	0.4	2.5	2.0	2.7	2.4	0.7	1.8	1.7
Q3	0.8	0.8	0.7	-0.6	1.6	0.1	2.9	2.2	2.6	2.5	1.1	2.3	2.1
Q4	0.8	0.5	0.2	0.5	1.5	0.2	2.7	2.3	2.2	2.3	0.8	2.2	1.9
2018 Oct.	-	-	-	-	-	-	3.1	2.3	2.5	2.4	1.4	2.5	2.3
Nov.	-	-	-	-	-	-	2.7	2.2	2.2	2.3	0.8	2.2	1.9
Dec.	-	-	-	-	-	-	2.4	2.2	1.9	2.1	0.3	1.9	1.5
2019 Jan.	-	-	-	-	-	-	2.1	2.2	1.6	1.8	0.2	1.7	1.4
Feb.	-	-	-	-	-	-	2.1	2.1	1.5	1.9	0.2	1.5	1.5
Mar. <sup>3)</sup>	-	-	-	-	-	-	.	.	.	.	.	.	1.4

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.

3) The figure for the euro area is an estimate based on provisional national data, as well as on early information on energy prices.

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

	Purchasing Managers' Surveys (diffusion indices; s.a.)									Merchandise imports <sup>1)</sup>		
	Composite Purchasing Managers' Index					Memo item: euro area	Global Purchasing Managers' Index <sup>2)</sup>			Global	Advanced economies	Emerging market economies
	Global <sup>2)</sup>	United States	United Kingdom	Japan	China		Manufacturing	Services	New export orders			
	1	2	3	4	5	6	7	8	9	10	11	12
2016	51.6	52.4	53.4	50.5	51.4	53.3	51.7	52.0	50.1	1.2	1.4	1.0
2017	53.2	54.3	54.7	52.5	51.8	56.4	53.8	53.8	52.8	5.7	3.1	7.3
2018	53.4	55.0	53.3	52.1	52.3	54.6	53.1	53.8	50.9	4.1	3.0	4.8
2018 Q2	53.9	55.9	54.3	52.3	52.5	54.7	53.1	54.2	50.3	-0.1	-0.8	0.4
Q3	53.1	54.8	53.9	51.5	52.1	54.3	52.6	53.2	49.8	2.0	0.8	2.7
Q4	53.1	54.7	51.4	52.3	51.5	52.3	52.0	53.5	49.9	-1.6	1.5	-3.6
2019 Q1	52.8	.	50.6	50.6	51.5	51.5	50.9	53.4	49.6	.	.	.
2018 Oct.	53.0	54.9	52.1	52.5	50.5	53.1	51.8	53.4	50.0	1.6	1.5	1.7
Nov.	53.3	54.7	50.8	52.4	51.9	52.7	52.0	53.8	49.8	0.1	1.3	-0.6
Dec.	53.1	54.4	51.4	52.0	52.2	51.1	52.1	53.4	50.0	-1.6	1.5	-3.6
2019 Jan.	52.4	54.4	50.3	50.9	50.9	51.0	50.9	52.9	49.6	-2.8	1.0	-5.1
Feb.	52.8	55.5	51.5	50.7	50.7	51.9	50.8	53.5	49.5	.	.	.
Mar.	53.1	.	50.0	50.4	52.9	51.6	51.1	53.8	49.7	.	.	.

Sources: Markit (col. 1-9); CPB Netherlands Bureau for Economic Policy Analysis and ECB calculations (col. 10-12).

1) Global and advanced economies exclude the euro area. Annual and quarterly data are period-on-period percentages; monthly data are 3-month-on-3-month percentages. All data are seasonally adjusted.

2) Excluding the euro area.

## 2 Financial developments

### 2.1 Money market interest rates

(percentages per annum; period averages)

	Euro area <sup>1)</sup>					United States	Japan
	Overnight deposits (EONIA)	1-month deposits (EURIBOR)	3-month deposits (EURIBOR)	6-month deposits (EURIBOR)	12-month deposits (EURIBOR)	3-month deposits (LIBOR)	3-month deposits (LIBOR)
	1	2	3	4	5	6	7
2016	-0.32	-0.34	-0.26	-0.17	-0.03	0.74	-0.02
2017	-0.35	-0.37	-0.33	-0.26	-0.15	1.26	-0.02
2018	-0.36	-0.37	-0.32	-0.27	-0.17	2.31	-0.05
2018 Sep.	-0.36	-0.37	-0.32	-0.27	-0.17	2.35	-0.04
Oct.	-0.37	-0.37	-0.32	-0.26	-0.15	2.46	-0.08
Nov.	-0.36	-0.37	-0.32	-0.26	-0.15	2.65	-0.10
Dec.	-0.36	-0.37	-0.31	-0.24	-0.13	2.79	-0.10
2019 Jan.	-0.37	-0.37	-0.31	-0.24	-0.12	2.77	-0.08
Feb.	-0.37	-0.37	-0.31	-0.23	-0.11	2.68	-0.08
Mar.	-0.37	-0.37	-0.31	-0.23	-0.11	2.61	-0.07

Source: ECB.

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

### 2.2 Yield curves

(End of period; rates in percentages per annum; spreads in percentage points)

	Spot rates					Spreads			Instantaneous forward rates			
	Euro area <sup>1), 2)</sup>					Euro area <sup>1), 2)</sup>	United States	United Kingdom	Euro area <sup>1), 2)</sup>			
	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
2016	-0.93	-0.82	-0.80	-0.47	0.26	1.08	1.63	1.17	-0.78	-0.75	0.35	1.35
2017	-0.78	-0.74	-0.64	-0.17	0.52	1.26	0.67	0.83	-0.66	-0.39	0.66	1.56
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
2018 Sep.	-0.62	-0.63	-0.55	-0.09	0.51	1.14	0.49	0.77	-0.59	-0.31	0.68	1.36
Oct.	-0.75	-0.73	-0.63	-0.17	0.43	1.17	0.48	0.67	-0.66	-0.37	0.60	1.31
Nov.	-0.67	-0.70	-0.64	-0.23	0.37	1.06	0.30	0.57	-0.68	-0.45	0.50	1.28
Dec.	-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 Jan.	-0.58	-0.60	-0.58	-0.32	0.19	0.79	0.08	0.45	-0.61	-0.50	0.24	1.00
Feb.	-0.57	-0.57	-0.54	-0.28	0.23	0.80	0.17	0.49	-0.56	-0.44	0.27	1.06
Mar.	-0.57	-0.61	-0.62	-0.45	-0.01	0.60	0.00	0.35	-0.64	-0.59	-0.02	0.75

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										Standard & Poor's 500	Nikkei 225
	Broad index	50	Basic materials	Consumer services	Consumer goods	Oil and gas	Financials	Industrials	Technology	Utilities	Telecoms	Health care		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2016	321.6	3,003.7	620.7	250.9	600.1	278.9	148.7	496.0	375.8	248.6	326.9	770.9	2,094.7	16,920.5
2017	376.9	3,491.0	757.3	268.6	690.4	307.9	182.3	605.5	468.4	272.7	339.2	876.3	2,449.1	20,209.0
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
2018 Sep.	376.4	3,365.2	779.9	265.1	692.5	356.4	168.0	649.7	511.7	278.1	274.6	807.2	2,901.5	23,159.3
Oct.	359.0	3,244.5	733.7	253.2	657.3	349.6	160.1	607.6	483.0	269.0	277.7	783.7	2,785.5	22,690.8
Nov.	351.3	3,186.4	692.3	258.1	649.3	328.6	157.2	589.4	459.6	277.1	293.9	757.5	2,723.2	21,967.9
Dec.	335.2	3,057.8	646.7	247.8	624.8	311.8	146.9	556.0	441.5	283.5	296.3	719.4	2,567.3	21,032.4
2019 Jan.	340.5	3,088.7	662.2	252.1	630.4	315.4	150.2	570.3	448.1	293.2	288.0	718.3	2,607.4	20,460.5
Feb.	355.0	3,223.1	699.4	266.4	667.5	329.9	152.9	598.9	480.6	301.7	285.8	743.0	2,754.9	21,123.6
Mar.	365.7	3,332.9	718.3	272.1	692.2	339.9	157.6	621.0	493.4	307.8	297.0	755.1	2,804.0	21,414.9

Source: ECB.



## 2 Financial developments

### 2.4 MFI interest rates on loans to and deposits from households (new business) <sup>1), 2)</sup>

(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				Composite cost-of-borrowing indicator	
	Over-night	Redeemable at notice of up to 3 months	With an agreed maturity of:				By initial period of rate fixation		APRC <sup>3)</sup>		By initial period of rate fixation					APRC <sup>3)</sup>
			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 Mar.	0.04	0.45	0.35	0.67	6.14	16.89	4.71	5.57	6.05	2.34	1.63	1.85	1.95	1.91	2.15	1.84
Apr.	0.04	0.45	0.34	0.61	6.12	16.87	4.94	5.67	6.14	2.37	1.62	1.85	1.96	1.90	2.13	1.83
May	0.04	0.46	0.34	0.57	6.10	16.89	4.82	5.88	6.39	2.39	1.58	1.85	1.97	1.90	2.13	1.83
June	0.03	0.46	0.33	0.63	6.05	16.84	4.50	5.64	6.11	2.31	1.60	1.81	1.97	1.88	2.12	1.82
July	0.03	0.45	0.33	0.63	6.01	16.80	4.84	5.75	6.22	2.41	1.63	1.83	1.93	1.85	2.12	1.81
Aug.	0.03	0.45	0.30	0.63	6.02	16.78	5.42	5.88	6.41	2.39	1.63	1.82	1.92	1.85	2.12	1.81
Sep.	0.03	0.45	0.30	0.69	6.05	16.71	5.28	5.74	6.27	2.38	1.60	1.81	1.91	1.85	2.09	1.79
Oct.	0.03	0.45	0.29	0.73	5.98	16.73	5.04	5.71	6.23	2.46	1.60	1.80	1.91	1.86	2.09	1.80
Nov.	0.03	0.44	0.29	0.72	5.94	16.54	4.92	5.68	6.18	2.38	1.61	1.85	1.94	1.88	2.11	1.81
Dec.	0.03	0.43	0.30	0.77	5.87	16.55	4.91	5.47	5.98	2.30	1.61	1.80	1.91	1.84	2.10	1.80
2019 Jan.	0.03	0.42	0.33	0.75	5.92	16.63	5.32	5.83	6.33	2.36	1.61	1.81	1.89	1.86	2.09	1.82
Feb. <sup>(b)</sup>	0.03	0.42	0.32	0.71	5.97	16.64	5.28	5.71	6.26	2.40	1.59	1.84	1.87	1.84	2.08	1.80

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) <sup>1), 2)</sup>

(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
	Over-night	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 Mar.	0.04	0.08	0.40	2.33	2.41	2.53	2.34	1.67	1.61	1.70	1.26	1.39	1.66	1.73
Apr.	0.04	0.06	0.32	2.33	2.37	2.42	2.33	1.67	1.61	1.74	1.23	1.29	1.65	1.71
May	0.03	0.08	0.43	2.28	2.31	2.47	2.38	1.65	1.61	1.74	1.08	1.22	1.65	1.62
June	0.04	0.07	0.74	2.29	2.27	2.44	2.31	1.64	1.56	1.71	1.21	1.33	1.70	1.68
July	0.03	0.08	0.38	2.27	2.16	2.41	2.28	1.67	1.59	1.68	1.14	1.30	1.66	1.64
Aug.	0.03	0.08	0.60	2.25	2.21	2.42	2.35	1.66	1.63	1.74	1.10	1.27	1.69	1.64
Sep.	0.03	0.08	0.44	2.22	2.22	2.34	2.32	1.65	1.54	1.69	1.12	1.40	1.69	1.65
Oct.	0.03	0.08	0.52	2.22	2.14	2.42	2.33	1.65	1.60	1.70	1.23	1.10	1.66	1.64
Nov.	0.03	0.07	0.63	2.19	2.20	2.40	2.34	1.66	1.60	1.69	1.20	1.35	1.69	1.66
Dec.	0.03	0.07	0.53	2.18	2.21	2.28	2.26	1.61	1.59	1.69	1.21	1.39	1.59	1.64
2019 Jan.	0.03	0.07	0.55	2.22	2.15	2.40	2.32	1.67	1.62	1.72	1.13	1.31	1.61	1.63
Feb. <sup>(b)</sup>	0.03	0.06	0.52	2.20	2.15	2.41	2.33	1.65	1.64	1.69	1.13	1.39	1.56	1.65

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 <sup>1)</sup>						
	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	
<b>Short-term</b>														
2016	1,241	518	136	.	59	466	62	349	161	45	.	31	79	33
2017	1,241	519	156	.	70	438	57	368	167	55	.	37	79	31
2018	1,202	505	155	.	72	424	47	386	171	63	.	40	76	35
2018 Aug.	1,313	527	178	.	95	447	65	409	203	60	.	31	82	33
Sep.	1,296	534	178	.	89	444	52	392	164	86	.	42	72	28
Oct.	1,282	529	168	.	92	439	54	422	185	76	.	46	77	38
Nov.	1,271	523	163	.	89	445	52	358	155	62	.	36	74	31
Dec.	1,202	505	155	.	72	424	47	273	107	61	.	36	44	26
2019 Jan.	1,279	541	157	.	87	435	58	470	223	63	.	48	98	38
<b>Long-term</b>														
2016	15,380	3,695	3,233	.	1,126	6,684	641	220	62	54	.	18	78	8
2017	15,362	3,560	3,109	.	1,186	6,865	642	247	66	74	.	17	83	7
2018	15,754	3,688	3,208	.	1,211	7,020	626	229	64	69	.	15	75	6
2018 Aug.	15,560	3,570	3,168	.	1,190	7,010	622	129	50	35	.	2	38	3
Sep.	15,683	3,608	3,187	.	1,209	7,055	623	264	79	70	.	29	82	4
Oct.	15,722	3,665	3,195	.	1,209	7,026	628	222	60	70	.	14	69	10
Nov.	15,803	3,689	3,223	.	1,207	7,054	629	228	66	76	.	8	72	7
Dec.	15,754	3,688	3,208	.	1,211	7,020	626	188	60	91	.	14	20	3
2019 Jan.	15,820	3,711	3,207	.	1,209	7,068	625	280	104	43	.	16	109	9

Source: ECB.

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

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

(EUR billions; percentage changes)

	Debt securities							Listed shares				
	Total	MFIs (including Eurosystem)	Non-MFI corporations			General government		Total	MFIs	Financial corporations other than MFIs	Non- financial corporations	
			Financial corporations other than MFIs	FVCs	Non- financial corporations	Central government	Other general government					
												3
1	2	3	4	5	6	7	8	9	10	11		
<b>Outstanding amount</b>												
2016	16,621.2	4,213.3	3,369.1	.	1,185.2	7,149.9	703.7	7,089.5	537.6	1,080.2	5,471.6	
2017	16,602.8	4,079.7	3,264.2	.	1,255.4	7,303.6	699.9	7,954.7	612.5	1,249.4	6,092.8	
2018	16,956.0	4,192.7	3,362.7	.	1,283.2	7,444.6	672.7	7,027.0	465.1	1,099.2	5,462.8	
2018 Aug.	16,872.7	4,097.0	3,345.6	.	1,284.9	7,457.7	687.5	8,019.9	521.1	1,282.5	6,216.3	
Sep.	16,979.1	4,142.1	3,364.3	.	1,298.6	7,499.3	674.8	7,955.7	543.5	1,293.9	6,118.4	
Oct.	17,004.0	4,194.1	3,362.8	.	1,300.2	7,464.9	682.0	7,546.6	515.4	1,201.8	5,829.4	
Nov.	17,074.2	4,211.8	3,386.4	.	1,296.0	7,499.0	681.0	7,475.0	512.1	1,179.2	5,783.6	
Dec.	16,956.0	4,192.7	3,362.7	.	1,283.2	7,444.6	672.7	7,027.0	465.1	1,099.2	5,462.8	
2019 Jan.	17,098.7	4,252.6	3,364.0	.	1,295.2	7,503.8	683.0	7,483.6	487.4	1,185.0	5,811.2	
<b>Growth rate</b>												
2016	0.3	-3.0	-1.2	.	6.5	2.2	-0.1	0.5	1.2	0.9	0.4	
2017	1.3	-0.5	-0.2	.	6.1	2.2	0.5	1.1	6.1	2.8	0.3	
2018	1.9	1.7	2.7	.	3.3	1.9	-4.3	0.8	-0.1	2.8	0.4	
2018 Aug.	1.5	-0.2	1.7	.	4.1	2.2	-2.6	1.1	0.5	4.7	0.5	
Sep.	1.9	0.9	2.1	.	5.0	2.4	-3.7	1.0	0.5	3.9	0.5	
Oct.	2.1	0.9	3.0	.	4.8	2.4	-3.1	0.9	0.5	3.1	0.5	
Nov.	2.1	1.3	3.4	.	3.6	2.4	-3.6	0.9	0.4	2.9	0.5	
Dec.	1.9	1.7	2.7	.	3.3	1.9	-4.3	0.8	-0.1	2.8	0.4	
2019 Jan.	2.1	2.2	2.1	.	3.4	2.3	-2.7	0.7	-0.1	2.7	0.4	

Source: ECB.

## 2 Financial developments

### 2.8 Effective exchange rates <sup>1)</sup>

(period averages; index: 1999 Q1=100)

	EER-19						EER-38	
	Nominal	Real CPI	Real PPI	Real GDP deflator	Real ULCM <sup>2)</sup>	Real ULCT	Nominal	Real CPI
	1	2	3	4	5	6	7	8
2016	94.4	89.4	90.9	85.1	79.1	89.3	109.7	88.7
2017	96.6	91.3	92.0	86.0	78.5	89.8	112.0	89.9
2018	98.9	93.3	93.5	87.6	79.6	91.0	117.9	93.7
2018 Q2	98.4	92.9	93.2	87.2	79.1	90.5	117.0	93.2
Q3	99.2	93.5	93.5	87.8	79.6	91.3	119.2	94.6
Q4	98.5	92.9	93.0	87.2	79.2	90.6	118.4	93.6
2019 Q1	97.4	91.6	92.3	.	.	.	116.7	92.0
2018 Oct.	98.9	93.2	93.2	-	-	-	119.0	94.2
Nov.	98.3	92.8	92.8	-	-	-	117.9	93.4
Dec.	98.4	92.6	93.0	-	-	-	118.0	93.2
2019 Jan.	97.8	92.0	92.8	-	-	-	117.3	92.6
Feb.	97.4	91.6	92.4	-	-	-	116.6	91.9
Mar.	96.9	91.1	91.8	-	-	-	116.2	91.5
	<i>Percentage change versus previous month</i>							
2019 Mar.	-0.5	-0.6	-0.6	-	-	-	-0.3	-0.4
	<i>Percentage change versus previous year</i>							
2019 Mar.	-2.9	-3.1	-2.8	-	-	-	-1.3	-2.4

Source: ECB.

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

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

### 2.9 Bilateral exchange rates

(period averages; units of national currency per euro)

	Chinese renminbi	Croatian kuna	Czech koruna	Danish krone	Hungarian forint	Japanese yen	Polish zloty	Pound sterling	Romanian leu	Swedish krona	Swiss franc	US Dollar
	1	2	3	4	5	6	7	8	9	10	11	12
2016	7.352	7.533	27.034	7.445	311.438	120.197	4.363	0.819	4.4904	9.469	1.090	1.107
2017	7.629	7.464	26.326	7.439	309.193	126.711	4.257	0.877	4.5688	9.635	1.112	1.130
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
2018 Q2	7.602	7.398	25.599	7.448	317.199	130.045	4.262	0.876	4.6532	10.330	1.174	1.191
Q3	7.915	7.417	25.718	7.455	324.107	129.606	4.303	0.892	4.6471	10.405	1.144	1.163
Q4	7.895	7.420	25.864	7.462	322.995	128.816	4.299	0.887	4.6605	10.320	1.137	1.141
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
2018 Oct.	7.948	7.425	25.819	7.460	323.843	129.617	4.305	0.883	4.6658	10.384	1.141	1.148
Nov.	7.888	7.428	25.935	7.461	322.330	128.789	4.302	0.881	4.6610	10.292	1.138	1.137
Dec.	7.840	7.404	25.835	7.465	322.738	127.878	4.290	0.898	4.6536	10.277	1.129	1.138
2019 Jan.	7.750	7.429	25.650	7.466	319.800	124.341	4.292	0.886	4.7062	10.269	1.130	1.142
Feb.	7.649	7.415	25.726	7.463	317.908	125.280	4.318	0.873	4.7486	10.499	1.137	1.135
Mar.	7.587	7.421	25.676	7.462	315.924	125.674	4.297	0.858	4.7546	10.500	1.131	1.130
	<i>Percentage change versus previous month</i>											
2019 Mar.	-0.8	0.1	-0.2	0.0	-0.6	0.3	-0.5	-1.7	0.1	0.0	-0.5	-0.4
	<i>Percentage change versus previous year</i>											
2019 Mar.	-2.7	-0.2	1.0	0.2	1.2	-4.0	2.1	-2.8	2.0	3.3	-3.2	-8.4

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 <sup>1)</sup>			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
<i>Outstanding amounts (international investment position)</i>												
2018 Q1	25,012.2	25,790.4	-778.2	10,751.0	8,857.7	8,530.2	10,921.1	-75.7	5,133.5	6,011.6	673.2	14,172.3
Q2	25,656.6	26,284.2	-627.5	10,965.4	9,014.8	8,742.7	10,986.3	-83.3	5,341.8	6,283.1	690.0	14,410.2
Q3	25,805.4	26,314.1	-508.7	10,913.3	8,916.3	8,886.5	11,069.5	-64.4	5,396.1	6,328.3	673.9	14,463.0
Q4	25,023.4	25,460.8	-437.4	10,562.7	8,777.2	8,467.0	10,424.1	-79.1	5,353.8	6,259.5	719.1	14,185.2
<i>Outstanding amounts as a percentage of GDP</i>												
2018 Q4	216.3	220.1	-3.8	91.3	75.9	73.2	90.1	-0.7	46.3	54.1	6.2	122.6
<i>Transactions</i>												
2018 Q1	438.0	336.0	102.0	65.0	-57.2	195.3	183.2	-4.5	170.9	210.0	11.3	-
Q2	197.6	154.6	43.0	39.2	21.2	0.5	-51.2	38.4	112.9	184.7	6.6	-
Q3	27.1	-60.0	87.1	-116.2	-102.3	43.9	-0.5	35.4	62.8	42.7	1.2	-
Q4	-338.0	-423.6	85.5	-208.3	-134.6	-55.6	-161.5	29.5	-109.5	-127.5	5.8	-
2018 Aug.	-11.7	-59.6	47.9	-47.8	-41.4	28.3	-48.5	15.8	-11.1	30.3	3.2	-
Sep.	-115.8	-159.5	43.7	-114.3	-110.7	-3.2	31.9	6.5	-7.0	-80.6	2.3	-
Oct.	62.4	89.9	-27.5	33.6	14.6	-30.2	-14.9	7.0	52.8	90.2	-0.7	-
Nov.	-45.0	-97.0	51.9	-106.1	-70.5	1.9	-12.3	16.0	39.8	-14.2	3.5	-
Dec.	-355.4	-416.5	61.1	-135.7	-78.8	-27.2	-134.3	6.6	-202.1	-203.4	3.1	-
2019 Jan.	221.8	213.4	8.5	0.0	12.2	38.1	39.3	5.7	180.7	161.8	-2.7	-
<i>12-month cumulated transactions</i>												
2019 Jan.	241.9	-80.1	322.0	-219.5	-221.9	121.2	-78.7	106.9	213.3	220.5	20.1	-
<i>12-month cumulated transactions as a percentage of GDP</i>												
2019 Jan.	2.1	-0.7	2.8	-1.9	-1.9	1.0	-0.7	0.9	1.8	1.9	0.2	-

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 <sup>1)</sup>			
		Total	Private consumption	Government consumption	Gross fixed capital formation			Changes in inventories <sup>2)</sup>	Total	Exports <sup>1)</sup>	Imports <sup>1)</sup>	
					Total construction	Total machinery	Intellectual property products					
1	2	3	4	5	6	7	8	9	10	11	12	
<i>Current prices (EUR billions)</i>												
2016	10,827.7	10,350.0	5,877.5	2,223.2	2,210.8	1,053.2	679.3	472.3	38.4	477.7	4,942.6	4,464.8
2017	11,205.2	10,683.9	6,058.5	2,279.9	2,302.7	1,121.3	716.3	459.3	42.9	521.3	5,295.9	4,774.6
2018	11,569.8	11,061.6	6,229.8	2,343.5	2,421.1	1,192.3	753.2	469.8	67.3	508.3	5,533.9	5,025.6
2018 Q1	2,865.1	2,726.2	1,543.8	578.5	591.2	290.7	183.9	115.2	12.7	138.9	1,358.5	1,219.6
Q2	2,887.8	2,756.0	1,553.0	584.7	603.4	297.3	188.4	116.3	14.9	131.8	1,379.8	1,248.0
Q3	2,902.6	2,787.2	1,562.2	586.6	613.0	301.1	191.7	118.7	25.5	115.4	1,393.5	1,278.1
Q4	2,920.3	2,797.0	1,572.4	593.5	619.0	305.7	192.0	119.8	12.1	123.3	1,408.4	1,285.2
<i>as a percentage of GDP</i>												
2018	100.0	95.6	53.8	20.3	20.9	10.3	6.5	4.1	0.6	4.4	-	-
<i>Chain-linked volumes (prices for the previous year)</i>												
<i>quarter-on-quarter percentage changes</i>												
2018 Q1	0.4	0.5	0.5	0.0	0.0	0.4	-0.8	0.2	-	-	-0.7	-0.5
Q2	0.4	0.4	0.2	0.4	1.5	1.4	2.3	0.8	-	-	1.1	1.3
Q3	0.1	0.5	0.1	0.1	0.6	0.2	0.9	1.3	-	-	0.2	1.1
Q4	0.2	0.0	0.2	0.7	0.6	0.8	0.0	1.0	-	-	0.9	0.5
<i>annual percentage changes</i>												
2016	2.0	2.4	2.0	1.8	4.0	2.7	5.8	4.3	-	-	3.0	4.2
2017	2.4	1.7	1.6	1.1	2.6	3.9	5.0	-3.5	-	-	5.2	3.9
2018	1.8	1.7	1.3	1.0	3.0	3.0	4.4	0.9	-	-	3.0	2.9
2018 Q1	2.4	1.9	1.7	1.1	3.3	3.2	5.2	0.7	-	-	3.9	2.8
Q2	2.1	1.5	1.4	1.1	2.8	3.8	5.9	-4.1	-	-	4.0	2.7
Q3	1.6	1.9	1.0	0.7	3.5	2.1	5.3	4.3	-	-	2.9	3.7
Q4	1.1	1.5	1.0	1.2	2.8	2.8	2.4	3.3	-	-	1.5	2.4
<i>contributions to quarter-on-quarter percentage changes in GDP; percentage points</i>												
2018 Q1	0.4	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.2	-0.1	-	-
Q2	0.4	0.4	0.1	0.1	0.3	0.1	0.1	0.0	-0.1	0.0	-	-
Q3	0.1	0.5	0.1	0.0	0.1	0.0	0.1	0.1	0.3	-0.4	-	-
Q4	0.2	0.0	0.1	0.1	0.1	0.1	0.0	0.0	-0.4	0.2	-	-
<i>contributions to annual percentage changes in GDP; percentage points</i>												
2016	2.0	2.3	1.1	0.4	0.8	0.3	0.4	0.2	0.1	-0.4	-	-
2017	2.4	1.6	0.9	0.2	0.5	0.4	0.3	-0.2	0.0	0.8	-	-
2018	1.8	1.6	0.7	0.2	0.6	0.3	0.3	0.0	0.1	0.2	-	-
2018 Q1	2.4	1.8	0.9	0.2	0.7	0.3	0.3	0.0	0.0	0.6	-	-
Q2	2.1	1.4	0.7	0.2	0.6	0.4	0.4	-0.2	-0.1	0.7	-	-
Q3	1.6	1.8	0.5	0.1	0.7	0.2	0.3	0.2	0.4	-0.2	-	-
Q4	1.1	1.4	0.5	0.2	0.6	0.3	0.2	0.1	0.1	-0.3	-	-

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	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
<b>Current prices (EUR billions)</b>												
2016	9,716.0	158.6	1,962.6	486.8	1,836.0	452.7	464.1	1,098.7	1,069.2	1,850.1	337.3	1,111.7
2017	10,048.5	171.4	2,032.5	512.7	1,917.3	469.4	455.5	1,129.7	1,118.6	1,897.5	343.8	1,156.8
2018	10,370.1	172.0	2,079.0	550.2	1,979.4	491.5	458.3	1,161.2	1,171.5	1,955.6	351.3	1,199.7
2018 Q1	2,568.8	42.8	518.9	133.7	489.8	121.2	114.2	287.4	289.5	483.7	87.5	296.3
Q2	2,588.3	42.6	521.1	136.5	494.6	122.9	113.8	289.3	292.4	487.5	87.6	299.5
Q3	2,601.8	43.0	521.0	138.9	496.4	124.1	114.8	291.2	294.0	490.2	88.0	300.8
Q4	2,617.3	43.4	520.0	142.0	499.4	124.9	115.3	293.3	296.3	494.5	88.1	303.0
<i>as a percentage of value added</i>												
2018	100.0	1.7	20.0	5.3	19.1	4.7	4.4	11.2	11.3	18.9	3.4	-
<b>Chain-linked volumes (prices for the previous year)</b>												
<i>quarter-on-quarter percentage changes</i>												
2018 Q1	0.4	0.3	-0.7	0.6	0.7	1.7	-0.6	0.5	1.2	0.3	0.3	0.3
Q2	0.4	-0.2	0.3	1.1	0.6	1.4	0.3	0.0	0.6	0.1	-0.1	0.6
Q3	0.2	-1.1	-0.1	0.5	0.1	0.7	0.5	0.4	-0.1	0.3	0.4	0.0
Q4	0.2	0.9	-0.5	1.1	0.2	0.6	0.1	0.3	0.5	0.3	0.0	0.2
<i>annual percentage changes</i>												
2016	1.9	-1.4	3.5	1.5	1.7	3.9	0.7	0.3	2.5	1.3	0.9	2.7
2017	2.4	0.9	3.1	3.1	3.2	4.4	-0.7	1.1	4.0	1.1	0.9	2.4
2018	1.9	0.8	1.4	3.5	2.3	4.5	0.3	1.3	2.9	1.1	0.9	1.5
2018 Q1	2.5	1.6	3.2	3.5	2.8	5.1	-0.1	1.5	3.5	1.4	1.4	1.6
Q2	2.2	1.4	2.4	3.4	2.7	5.4	0.0	1.2	3.3	1.1	0.8	1.8
Q3	1.6	0.0	0.9	3.4	2.1	4.4	0.8	1.2	2.5	1.0	0.8	1.5
Q4	1.1	-0.1	-1.0	3.4	1.6	4.6	0.3	1.3	2.3	1.1	0.6	1.2
<i>contributions to quarter-on-quarter percentage changes in value added; percentage points</i>												
2018 Q1	0.4	0.0	-0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.0	-
Q2	0.4	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	-
Q3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	-
Q4	0.2	0.0	-0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	-
<i>contributions to annual percentage changes in value added; percentage points</i>												
2016	1.9	0.0	0.7	0.1	0.3	0.2	0.0	0.0	0.3	0.2	0.0	-
2017	2.4	0.0	0.6	0.2	0.6	0.2	0.0	0.1	0.4	0.2	0.0	-
2018	1.9	0.0	0.3	0.2	0.4	0.2	0.0	0.1	0.3	0.2	0.0	-
2018 Q1	2.5	0.0	0.6	0.2	0.5	0.2	0.0	0.2	0.4	0.3	0.0	-
Q2	2.2	0.0	0.5	0.2	0.5	0.3	0.0	0.1	0.4	0.2	0.0	-
Q3	1.6	0.0	0.2	0.2	0.4	0.2	0.0	0.1	0.3	0.2	0.0	-
Q4	1.1	0.0	-0.2	0.2	0.3	0.2	0.0	0.1	0.3	0.2	0.0	-

Sources: Eurostat and ECB calculations.

## 3 Economic activity

### 3.3 Employment <sup>1)</sup>

(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													
<i>as a percentage of total persons employed</i>													
2016	100.0	85.5	14.5	3.2	14.8	6.0	24.9	2.8	2.6	1.0	13.5	24.2	7.0
2017	100.0	85.8	14.2	3.2	14.7	6.0	24.9	2.8	2.5	1.0	13.7	24.2	7.0
2018	100.0	86.0	14.0	3.1	14.7	6.0	24.9	2.9	2.4	1.0	13.8	24.1	6.9
<i>annual percentage changes</i>													
2016	1.4	1.7	-0.3	-0.4	0.8	0.4	1.7	3.0	-0.2	1.9	2.7	1.4	0.7
2017	1.6	2.0	-0.5	-0.6	1.2	1.8	1.7	3.1	-1.2	1.5	3.1	1.3	1.3
2018	1.5	1.8	-0.4	-0.3	1.4	2.5	1.4	3.1	-1.0	2.1	2.7	1.2	0.6
2018 Q1	1.6	2.0	-0.7	-0.7	1.6	2.1	1.5	2.6	-1.0	2.5	3.2	1.3	1.0
Q2	1.6	1.9	-0.4	-0.4	1.7	2.4	1.3	2.7	-0.9	2.4	3.2	1.3	1.3
Q3	1.4	1.7	-0.3	0.2	1.3	2.5	1.4	3.5	-1.2	1.9	2.5	1.2	0.2
Q4	1.3	1.6	-0.3	-0.4	1.2	3.0	1.4	3.5	-0.9	1.6	2.0	1.1	-0.3
Hours worked													
<i>as a percentage of total hours worked</i>													
2016	100.0	80.6	19.4	4.3	15.3	6.7	25.8	3.0	2.6	1.0	13.2	21.9	6.2
2017	100.0	81.0	19.0	4.2	15.3	6.7	25.8	3.0	2.6	1.0	13.4	21.8	6.2
2018	100.0	81.4	18.6	4.2	15.3	6.8	25.7	3.0	2.5	1.0	13.6	21.8	6.1
<i>annual percentage changes</i>													
2016	1.5	1.9	-0.3	-0.3	0.9	0.7	1.7	2.8	0.2	2.3	2.9	1.4	0.8
2017	1.4	1.9	-0.8	-1.0	1.2	1.9	1.4	3.0	-1.6	2.1	3.0	1.1	0.7
2018	1.6	2.1	-0.4	0.3	1.5	3.1	1.3	3.2	-0.7	2.3	3.1	1.4	0.7
2018 Q1	1.5	2.1	-0.9	-0.6	1.5	2.2	1.2	2.3	-0.9	3.7	3.2	1.3	0.5
Q2	1.8	2.3	-0.5	0.7	1.7	2.8	1.1	3.1	-0.4	2.2	3.7	1.6	1.8
Q3	1.7	2.1	-0.1	0.8	1.3	3.5	1.4	3.7	-0.9	2.2	3.2	1.3	0.8
Q4	1.5	1.9	-0.1	-0.1	1.1	3.5	1.3	3.7	-0.4	1.1	2.4	1.4	0.7
Hours worked per person employed													
<i>annual percentage changes</i>													
2016	0.1	0.2	0.0	0.2	0.1	0.3	0.0	-0.1	0.4	0.4	0.1	0.1	0.1
2017	-0.2	-0.1	-0.3	-0.4	0.0	0.1	-0.3	-0.1	-0.4	0.6	-0.1	-0.2	-0.7
2018	0.1	0.3	0.0	0.6	0.1	0.6	-0.1	0.1	0.4	0.2	0.4	0.1	0.2
2018 Q1	-0.1	0.1	-0.2	0.1	-0.1	0.2	-0.3	-0.2	0.1	1.1	0.0	0.0	-0.6
Q2	0.2	0.4	-0.1	1.1	0.1	0.4	-0.2	0.3	0.5	-0.2	0.5	0.3	0.5
Q3	0.3	0.4	0.3	0.7	0.1	1.0	0.0	0.2	0.3	0.3	0.7	0.1	0.6
Q4	0.2	0.3	0.2	0.3	-0.1	0.4	-0.2	0.2	0.5	-0.5	0.4	0.2	1.0

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 <sup>1)</sup>	Under-employment, % of labour force <sup>1)</sup>	Unemployment											Job vacancy rate <sup>2)</sup>
			Total		Long-term unemployment, % of labour force <sup>1)</sup>	By age				By gender				
			Millions	% of labour force		Adult		Youth		Male		Female		
						Millions	% of labour force	Millions	% of labour force	Millions	% of labour force	Millions	% of labour force	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	
% of total in 2016			100.0		81.7		18.3		52.2		47.8			
2016	162.028	4.3	16.257	10.0	5.0	13.293	9.0	2.964	20.9	8.484	9.7	7.773	10.4	1.7
2017	162.659	4.1	14.763	9.1	4.4	12.095	8.1	2.668	18.8	7.638	8.7	7.125	9.5	1.9
2018	.	.	13.392	8.2	.	10.962	7.4	2.430	17.0	6.899	7.9	6.493	8.6	2.1
2018 Q1	162.591	4.0	13.916	8.5	4.2	11.412	7.7	2.504	17.6	7.189	8.2	6.727	8.9	2.1
Q2	163.180	3.9	13.503	8.3	3.9	11.069	7.4	2.434	17.0	6.957	7.9	6.546	8.7	2.1
Q3	163.709	3.6	13.160	8.1	3.6	10.759	7.2	2.401	16.8	6.797	7.7	6.362	8.4	2.1
Q4	.	.	12.990	7.9	.	10.610	7.1	2.380	16.5	6.653	7.6	6.337	8.4	2.3
2018 Sep.	-	-	13.119	8.0	-	10.714	7.2	2.405	16.8	6.775	7.7	6.344	8.4	-
Oct.	-	-	13.126	8.0	-	10.710	7.2	2.416	16.8	6.740	7.7	6.387	8.4	-
Nov.	-	-	12.984	7.9	-	10.617	7.1	2.367	16.4	6.658	7.6	6.326	8.3	-
Dec.	-	-	12.860	7.9	-	10.503	7.0	2.356	16.3	6.562	7.5	6.298	8.3	-
2019 Jan.	-	-	12.807	7.8	-	10.456	7.0	2.351	16.2	6.535	7.4	6.272	8.3	-
Feb.	-	-	12.730	7.8	-	10.393	7.0	2.337	16.1	6.494	7.4	6.236	8.2	-

Sources: Eurostat and ECB calculations.

1) Not seasonally adjusted.

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

### 3.5 Short-term business statistics

	Industrial production					Construction production	ECB indicator on industrial new orders	Retail sales				New passenger car registrations	
	Total (excluding construction)		Main Industrial Groupings					Total	Food, beverages, tobacco	Non-food	Fuel		
	Manufacturing	Intermediate goods	Capital goods	Consumer goods	Energy								
1	2	3	4	5	6	7	8	9	10	11	12	13	
% of total in 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													
2016	1.6	1.8	1.8	2.0	1.7	0.5	3.0	0.6	1.6	1.0	2.2	1.4	7.2
2017	2.9	3.2	3.4	3.9	1.4	1.1	2.9	7.9	2.5	1.6	3.4	0.9	5.7
2018	1.0	1.3	0.6	2.0	1.2	-1.6	2.2	2.6	1.6	1.3	1.9	0.6	0.8
2018 Q1	3.1	3.5	3.1	4.4	2.5	0.5	2.6	6.6	1.7	1.6	1.9	0.1	5.3
Q2	2.3	2.8	1.7	4.3	2.0	-2.1	2.5	3.8	1.8	1.2	2.5	0.7	3.2
Q3	0.6	0.8	-0.3	1.7	0.9	-1.2	2.2	1.4	1.2	1.0	1.5	-0.1	3.4
Q4	-1.9	-1.7	-2.0	-1.9	-0.5	-3.6	1.7	-1.0	1.6	1.4	1.9	1.5	-9.4
2018 Sep.	0.7	0.9	-0.3	2.2	0.8	-1.5	3.7	0.2	0.3	0.1	0.5	0.7	-21.2
Oct.	1.2	1.6	0.1	3.3	1.0	-2.7	0.8	-0.2	2.7	2.5	3.2	1.3	-11.8
Nov.	-2.9	-2.8	-2.8	-4.3	0.3	-3.7	1.1	1.6	1.9	0.8	2.6	1.9	-8.9
Dec.	-4.2	-4.0	-3.5	-4.9	-3.0	-4.3	2.1	-4.4	0.5	0.8	0.2	1.4	-7.5
2019 Jan.	-1.1	-1.9	-1.8	-3.0	0.5	4.0	-0.7	-3.1	2.2	1.7	2.2	4.0	-2.5
Feb.	.	.	.	.	.	.	.	.	2.8	0.6	4.4	1.6	-2.3
month-on-month percentage changes (s.a.)													
2018 Sep.	-0.6	-0.4	-0.3	-0.3	-0.9	-2.2	2.0	-1.3	-0.4	-0.5	-0.5	0.7	-37.1
Oct.	0.1	0.1	0.2	0.3	-0.2	-1.1	-1.5	0.2	0.7	0.7	0.6	0.7	9.1
Nov.	-1.5	-1.6	-1.1	-2.6	-0.5	0.7	0.3	3.5	0.9	-0.4	1.5	0.4	6.7
Dec.	-0.9	-0.8	0.3	-1.1	-1.9	-0.6	1.1	-4.1	-1.4	0.1	-2.3	-0.3	2.5
2019 Jan.	1.4	1.1	0.2	0.9	2.4	2.4	-1.4	-0.9	0.9	0.1	1.6	1.5	4.8
Feb.	.	.	.	.	.	.	.	.	0.4	0.1	0.9	-0.7	-0.1

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



## 3 Economic activity

### 3.6 Opinion surveys (seasonally adjusted)

	European Commission Business and Consumer Surveys (percentage balances, unless otherwise indicated)								Purchasing Managers' Surveys (diffusion indices)			
	Economic sentiment indicator (long-term average = 100)	Manufacturing industry		Consumer confidence indicator	Construction confidence indicator	Retail trade confidence indicator	Service industries		Purchasing Managers' Index (PMI) for manufacturing	Manufacturing output	Business activity for services	Composite output
		Industrial confidence indicator	Capacity utilisation (%)				Services confidence indicator	Capacity utilisation (%)				
	1	2	3	4	5	6	7	8	9	10	11	12
1999-15	99.2	-5.3	80.7	-12.3	-15.0	-8.7	7.2	-	51.2	52.5	53.0	52.8
2016	104.1	-1.8	81.7	-8.6	-16.4	0.6	11.3	88.9	52.5	53.6	53.1	53.3
2017	110.1	5.5	83.2	-6.0	-4.2	2.3	14.6	89.8	57.4	58.5	55.6	56.4
2018	111.2	6.6	83.8	-5.5	6.1	1.3	15.2	90.3	54.9	54.7	54.5	54.6
2018 Q2	111.8	7.8	83.9	-5.2	5.5	0.5	15.1	90.4	55.6	55.1	54.5	54.7
Q3	110.9	5.9	83.7	-5.6	6.6	1.9	15.3	90.3	54.3	54.0	54.4	54.3
Q4	108.9	3.6	83.6	-6.9	7.9	-0.3	13.4	90.4	51.7	51.0	52.8	52.3
2019 Q1	106.0	-0.5	.	-7.5	7.5	-1.0	11.5	.	49.1	49.0	52.4	51.5
2018 Oct.	109.7	4.2	83.6	-5.9	8.0	-0.5	14.0	90.1	52.0	51.3	53.7	53.1
Nov.	109.5	4.4	-	-6.6	8.3	-0.2	14.0	-	51.8	50.7	53.4	52.7
Dec.	107.4	2.3	-	-8.3	7.3	-0.1	12.2	-	51.4	51.0	51.2	51.1
2019 Jan.	106.3	0.6	83.6	-7.9	8.4	-2.1	11.0	90.7	50.5	50.5	51.2	51.0
Feb.	106.2	-0.4	-	-7.4	6.6	-1.3	12.1	-	49.3	49.4	52.8	51.9
Mar.	105.5	-1.7	-	-7.2	7.5	0.2	11.3	-	47.5	47.2	53.3	51.6

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) <sup>1)</sup>	Debt ratio	Real gross disposable income	Financial investment	Non-financial investment (gross)	Net worth <sup>2)</sup>	Housing wealth	Profit share <sup>3)</sup>	Saving ratio (net)	Debt ratio <sup>4)</sup>	Financial investment	Non-financial investment (gross)	Financing
	Percentage of gross disposable income (adjusted)	Annual percentage changes					Percentage of net value added	Percentage of GDP	Annual percentage changes				
	1	2	3	4	5	6	7	8	9	10	11	12	13
2015	12.2	94.1	1.6	2.0	1.2	3.2	2.0	34.7	5.9	138.5	5.0	7.9	2.9
2016	12.1	94.3	1.8	2.0	5.7	3.3	2.7	35.4	7.6	138.8	4.9	6.3	2.9
2017	11.8	94.0	1.4	2.0	6.9	4.1	4.2	34.8	6.9	137.9	3.8	5.0	2.3
2018 Q1	11.8	93.7	1.8	1.9	4.9	3.8	4.7	34.9	7.0	137.6	3.1	-0.3	1.8
Q2	11.9	93.7	2.1	1.9	8.0	3.9	4.8	35.0	6.9	138.3	3.2	1.6	1.8
Q3	12.0	93.5	1.4	1.9	7.9	3.8	5.0	34.7	6.9	138.0	2.9	8.7	1.7
Q4	12.1	93.3	1.6	1.9	8.3	2.7	4.9	34.6	6.6	137.0	2.2	12.4	1.4

Sources: ECB and Eurostat.

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

## 3 Economic activity

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

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

	Current account											Capital account <sup>1)</sup>	
	Total			Goods		Services		Primary income		Secondary income		Credit	Debit
	Credit	Debit	Net	Credit	Debit	Credit	Debit	Credit	Debit	Credit	Debit		
1	2	3	4	5	6	7	8	9	10	11	12	13	
2018 Q1	1,001.5	902.9	98.6	572.2	494.0	220.8	192.3	179.8	157.2	28.7	59.5	12.6	6.4
Q2	1,022.0	934.1	87.9	575.5	507.4	222.5	193.8	196.1	169.0	27.9	63.9	8.3	8.8
Q3	1,035.5	966.8	68.7	586.2	525.5	229.4	203.9	191.5	168.8	28.4	68.7	8.7	5.8
Q4	1,045.4	965.5	79.9	598.6	528.7	231.1	206.2	186.2	155.9	29.6	74.7	21.9	33.6
2018 Aug.	350.3	319.3	31.1	197.5	174.6	77.2	67.8	65.7	54.6	9.9	22.2	3.2	1.7
Sep.	345.4	326.9	18.4	195.6	177.3	76.8	68.3	63.7	58.3	9.4	23.1	2.5	2.2
Oct.	352.7	322.5	30.2	203.0	180.6	75.0	67.0	65.2	51.2	9.5	23.8	3.3	9.6
Nov.	350.9	325.1	25.8	198.4	175.1	79.1	69.7	62.9	54.9	10.5	25.4	4.1	10.6
Dec.	341.8	317.9	23.9	197.2	173.0	77.0	69.6	58.0	49.8	9.6	25.6	14.5	13.4
2019 Jan.	357.4	320.6	36.8	201.1	176.3	77.4	69.1	68.7	54.1	10.2	21.1	3.8	2.1
<i>12-month cumulated transactions</i>													
2019 Jan.	4,124.5	3,785.9	338.6	2,339.3	2,064.3	907.0	801.9	762.9	651.1	115.3	268.5	49.1	54.6
<i>12-month cumulated transactions as a percentage of GDP</i>													
2019 Jan.	35.6	32.7	2.9	20.2	17.8	7.8	6.9	6.6	5.6	1.0	2.3	0.4	0.5

1) The capital account is not seasonally adjusted.

### 3.9 Euro area external trade in goods<sup>1)</sup>, values and volumes by product group<sup>2)</sup>

(seasonally adjusted, unless otherwise indicated)

	Total (n.s.a.)		Exports (f.o.b.)					Imports (c.i.f.)					
	Exports	Imports	Total			Memo item: Manu- facturing	Total			Memo items:			
			Intermediate goods	Capital goods	Consumption goods		Intermediate goods	Capital goods	Consumption goods	Manu- facturing	Oil		
1	2	3	4	5	6	7	8	9	10	11	12	13	
<i>Values (EUR billions; annual percentage changes for columns 1 and 2)</i>													
2018 Q1	2.1	2.3	561.2	270.5	113.9	167.8	470.4	503.9	291.9	81.2	123.6	357.3	65.2
Q2	4.3	6.1	565.9	271.2	117.8	166.7	474.0	515.2	300.8	79.9	126.9	364.1	65.7
Q3	4.7	10.4	572.7	277.6	117.4	166.9	478.1	531.2	309.6	86.2	126.9	373.6	68.6
Q4	3.9	7.8	580.1	278.0	122.8	168.3	484.9	535.7	309.5	87.5	130.4	379.5	66.4
2018 Aug.	5.5	9.0	192.7	93.5	38.9	56.5	161.2	176.4	102.7	28.3	42.2	123.8	23.0
Sep.	-0.5	7.9	190.7	92.4	39.4	55.4	160.1	177.7	103.4	29.3	42.3	125.0	22.7
Oct.	11.1	14.9	194.1	93.6	40.4	56.2	161.1	180.9	105.9	29.2	44.1	126.8	24.2
Nov.	2.3	5.5	192.7	92.7	40.3	55.9	162.1	177.6	102.1	28.7	43.6	126.5	21.2
Dec.	-1.9	2.7	193.3	91.6	42.1	56.2	161.6	177.3	101.4	29.7	42.8	126.2	21.0
2019 Jan.	2.4	3.4	194.8	.	.	.	163.3	177.8	.	.	.	125.5	.
<i>Volume indices (2000 = 100; annual percentage changes for columns 1 and 2)</i>													
2018 Q1	2.3	2.6	125.8	125.6	123.3	131.5	126.3	114.4	115.1	113.6	115.1	117.6	110.4
Q2	3.0	2.8	125.6	124.3	126.7	129.5	126.3	115.3	115.5	112.2	118.4	119.4	101.8
Q3	1.0	2.0	125.3	125.3	124.8	127.7	125.9	115.4	114.8	118.0	115.4	120.1	99.6
Q4	0.1	1.7	126.0	124.7	129.2	127.7	126.4	115.9	115.0	117.2	117.7	120.4	100.7
2018 July	6.3	7.0	124.7	124.5	125.5	126.7	124.3	116.1	115.6	119.1	116.4	121.1	100.6
Aug.	1.7	0.4	126.6	126.8	124.3	129.8	127.5	115.4	114.9	117.0	115.0	119.6	102.5
Sep.	-4.7	-1.3	124.5	124.8	124.7	126.5	126.0	114.6	113.8	117.9	114.8	119.5	95.5
Oct.	6.9	5.3	126.9	126.2	128.7	128.5	127.0	116.5	115.9	118.9	119.6	121.7	98.2
Nov.	-1.6	-0.7	125.4	124.6	127.3	127.0	126.8	114.7	113.3	114.3	117.5	119.8	95.0
Dec.	-5.1	0.3	125.7	123.4	131.7	127.7	125.5	116.5	115.8	118.3	115.9	119.7	109.0

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 <sup>1)</sup>

(annual percentage changes, unless otherwise indicated)

	Total					Total (s.a.; percentage change vis-à-vis previous period) <sup>2)</sup>						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
		2	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	83.6	16.4
2016	100.2	0.2	0.8	-0.4	1.1	-	-	-	-	-	-	0.2	0.3
2017	101.8	1.5	1.0	1.6	1.4	-	-	-	-	-	-	1.6	1.0
2018	103.6	1.8	1.0	2.0	1.5	-	-	-	-	-	-	1.7	2.1
2018 Q2	103.8	1.7	1.0	2.0	1.4	0.6	0.7	1.0	0.0	1.9	0.5	1.7	1.6
Q3	104.1	2.1	1.0	2.6	1.5	0.5	0.4	0.5	0.1	2.7	0.3	2.1	2.4
Q4	104.3	1.9	1.0	2.3	1.5	0.3	0.3	0.3	0.1	1.6	0.2	1.8	2.8
2019 Q1	103.5	1.4	1.0	.	1.4	0.0	0.6	0.1	0.1	-2.4	0.3	.	.
2018 Oct.	104.7	2.3	1.2	2.7	1.7	0.2	0.1	-0.4	0.0	1.8	0.1	2.2	2.8
Nov.	104.1	1.9	0.9	2.4	1.4	0.0	0.1	-0.6	0.0	0.0	0.0	1.8	2.8
Dec.	104.1	1.5	0.9	1.7	1.3	-0.3	0.0	0.2	0.0	-3.3	0.1	1.3	2.7
2019 Jan.	103.0	1.4	1.1	1.2	1.6	0.0	0.3	0.0	0.1	-0.9	0.1	1.2	2.4
Feb.	103.3	1.5	1.0	1.6	1.4	0.2	0.2	0.9	0.0	0.6	0.0	1.3	2.3
Mar. <sup>3)</sup>	104.4	1.4	0.8	.	1.1	0.1	0.4	-1.3	-0.2	0.8	0.2	.	.

	Goods						Services						
	Food (including alcoholic beverages and tobacco)			Industrial goods			Housing	Transport	Communi-cation	Recreation and personal care	Miscel-laneous		
	Total	Processed food	Unpro-cessed food	Total	Non-energy industrial goods	Energy	Rents						
14	15	16	17	18	19	20	21	22	23	24	25		
% of total in 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	
2016	0.9	0.6	1.4	-1.1	0.4	-5.1	1.1	1.1	0.8	0.0	1.3	1.2	
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	
2018 Q2	2.6	2.3	3.3	1.6	0.2	5.6	1.2	1.2	1.3	0.1	1.9	1.3	
Q3	2.5	2.1	3.8	2.7	0.2	9.5	1.1	1.1	1.4	0.2	2.2	1.3	
Q4	2.0	1.9	2.0	2.4	0.2	8.4	1.2	1.1	1.5	-0.3	1.9	1.7	
2019 Q1	2.0	2.0	1.9	.	0.3	3.8	.	.	.	.	.	.	
2018 Oct.	2.2	2.1	2.4	3.0	0.2	10.8	1.2	1.1	1.8	-0.2	2.5	1.7	
Nov.	1.9	2.0	1.8	2.6	0.2	9.1	1.2	1.1	1.6	-0.5	1.5	1.7	
Dec.	1.8	1.7	1.8	1.6	0.2	5.5	1.2	1.1	1.2	-0.3	1.6	1.7	
2019 Jan.	1.8	1.8	1.8	1.0	0.3	2.7	1.2	1.1	1.6	-0.4	2.2	1.5	
Feb.	2.3	2.1	2.9	1.3	0.4	3.6	1.2	1.2	1.3	-0.8	1.8	1.5	
Mar. <sup>3)</sup>	1.8	2.0	1.2	.	0.2	5.3	.	.	.	.	.	.	

Sources: Eurostat and ECB calculations.

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

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

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

## 4 Prices and costs

### 4.2 Industry, construction and property prices

(annual percentage changes, unless otherwise indicated)

	Industrial producer prices excluding construction <sup>1)</sup>										Con- struction <sup>2)</sup>	Residential property prices <sup>3)</sup>	Experimental indicator of commercial property prices <sup>3)</sup>
	Total (index: 2015 = 100)	Total	Industry excluding construction and energy						Energy				
			Manu- facturing	Total	Intermedi- ate 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	3.4	5.0
2017	100.8	3.0	3.0	2.1	3.2	0.9	1.9	2.8	0.2	5.7	2.0	3.7	5.1
2018	104.0	3.2	2.5	1.5	2.7	1.0	0.4	0.2	0.7	8.1	2.4	.	.
2018 Q1	102.4	1.7	1.6	1.5	2.4	0.9	0.8	1.0	0.5	2.0	2.1	4.3	4.6
Q2	103.1	2.8	2.6	1.4	2.5	1.0	0.3	0.1	0.6	6.7	2.2	4.2	3.4
Q3	104.9	4.3	3.2	1.5	3.1	1.1	0.1	-0.3	0.7	12.5	2.9	4.3	.
Q4	105.7	4.0	2.3	1.4	2.5	1.1	0.3	-0.2	0.8	11.1	2.3	.	.
2018 Sep.	105.4	4.6	3.0	1.5	2.9	1.1	0.0	-0.4	0.7	13.0	-	-	-
Oct.	106.2	4.9	3.2	1.5	2.7	1.2	0.2	-0.3	0.8	14.6	-	-	-
Nov.	105.9	4.0	2.3	1.5	2.6	1.2	0.2	-0.2	0.8	11.0	-	-	-
Dec.	105.1	3.0	1.5	1.3	2.2	1.1	0.4	0.0	0.8	7.8	-	-	-
2019 Jan.	105.4	2.9	1.0	1.2	1.7	1.4	0.4	0.0	1.0	7.4	-	-	-
Feb.	105.5	3.0	1.5	1.2	1.3	1.5	0.6	0.0	1.1	8.0	-	-	-

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](https://www.ecb.europa.eu/stats/ecb_statistics/governance_and_quality_framework/html/experimental-data.en.html) for further details).

### 4.3 Commodity prices and GDP deflators

(annual percentage changes, unless otherwise indicated)

	GDP deflators								Oil prices (EUR per barrel)	Non-energy commodity prices (EUR)					
	Total (s.a.; index: 2010 = 100)	Total	Domestic demand				Exports <sup>1)</sup>	Imports <sup>1)</sup>		Import-weighted <sup>2)</sup>			Use-weighted <sup>2)</sup>		
			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	
2016	106.8	0.8	0.4	0.4	0.5	0.7	-1.4	-2.4	39.9	-2.0	-1.4	-2.8	-3.1	-3.7	-2.3
2017	108.0	1.1	1.5	1.4	1.4	1.5	1.9	3.0	48.1	5.8	-3.5	16.6	6.7	-1.6	17.8
2018	109.5	1.4	1.8	1.5	1.7	2.1	1.4	2.3	60.4	-0.9	-6.3	4.3	-0.2	-5.5	5.7
2018 Q2	109.3	1.3	1.8	1.5	1.8	1.9	1.1	2.0	62.6	2.1	-6.0	10.3	1.9	-6.3	11.7
Q3	109.7	1.4	2.1	1.8	1.9	2.4	2.3	3.9	64.8	2.0	-3.4	7.1	3.1	-2.2	8.8
Q4	110.1	1.5	1.9	1.7	1.8	2.4	1.9	2.8	59.5	1.9	0.1	3.6	2.3	0.2	4.4
2019 Q1	.	.	.	.	.	.	.	.	55.6	3.3	3.9	2.8	4.0	5.3	2.7
2018 Oct.	-	-	-	-	-	-	-	-	70.1	2.6	-0.9	5.7	2.9	-0.4	6.4
Nov.	-	-	-	-	-	-	-	-	57.4	1.7	-0.9	4.1	1.7	-1.2	4.8
Dec.	-	-	-	-	-	-	-	-	49.8	1.5	2.0	1.1	2.2	2.4	2.1
2019 Jan.	-	-	-	-	-	-	-	-	51.9	1.2	3.9	-1.1	1.5	3.8	-0.7
Feb.	-	-	-	-	-	-	-	-	56.5	4.2	5.1	3.5	4.5	5.7	3.3
Mar.	-	-	-	-	-	-	-	-	58.8	4.4	2.6	6.0	6.0	6.4	5.5

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	31.7	56.7	56.3	-	49.7
2016	-0.4	2.3	4.4	-7.1	0.3	49.8	53.9	49.3	49.6
2017	9.2	5.1	6.9	2.5	12.3	64.6	56.3	55.1	51.6
2018	11.5	7.4	9.4	12.1	20.0	65.4	57.9	56.1	52.7
2018 Q2	10.3	6.9	9.4	12.1	18.4	65.6	57.6	56.5	52.3
Q3	11.1	7.5	9.0	12.4	20.8	65.2	58.4	55.5	52.8
Q4	11.9	8.5	10.0	13.0	23.5	62.6	58.4	54.5	52.7
2019 Q1	8.9	8.3	10.3	11.4	20.0	53.9	57.7	53.0	53.1
2018 Oct.	10.4	9.0	8.8	13.0	24.1	65.1	58.5	54.8	52.8
Nov.	12.2	7.4	10.1	12.4	23.6	63.6	58.9	54.7	52.8
Dec.	13.0	9.2	11.1	13.6	22.7	59.1	57.9	54.1	52.5
2019 Jan.	10.7	8.8	11.5	12.9	18.9	55.7	58.3	53.8	53.2
Feb.	9.0	8.1	9.2	12.4	20.0	53.9	58.1	52.7	52.7
Mar.	7.0	7.9	10.2	9.0	21.2	52.3	56.8	52.3	53.3

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

### 4.5 Labour cost indices

(annual percentage changes, unless otherwise indicated)

	Total (index: 2012 = 100)	Total	By component		For selected economic activities		Memo item: Indicator of negotiated wages <sup>1)</sup>
			Wages and salaries	Employers' social contributions	Business economy	Mainly non-business economy	
	1	2	3	4	5	6	7
% of total in 2012	100.0	100.0	74.6	25.4	69.3	30.7	
2016	105.5	1.3	1.4	1.1	1.3	1.5	1.4
2017	107.4	1.8	1.8	1.8	1.9	1.6	1.5
2018	109.8	2.2	2.1	2.8	2.4	1.9	2.0
2018 Q1	102.6	2.0	1.8	2.7	2.3	1.5	1.7
Q2	113.7	2.2	1.9	2.9	2.6	1.5	2.1
Q3	106.4	2.5	2.4	3.0	2.6	2.2	2.1
Q4	116.6	2.3	2.4	2.4	2.2	2.5	2.2

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](https://www.ecb.europa.eu/stats/ecb_statistics/governance_and_quality_framework/html/experimental-data.en.html) for further details).

## 4 Prices and costs

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

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

	Total (index: 2010 =100)	Total	By economic activity									
			Agriculture, forestry and fishing	Manu- facturing, energy and utilities	Con- struction	Trade, transport, accom- modation and food services	Information and commu- nication	Finance and insurance	Real estate	Professional, business and support services	Public ad- ministration, education, health and social work	Arts, enter- tainment and other services
	1	2	3	4	5	6	7	8	9	10	11	12
<b>Unit labour costs</b>												
2016	105.3	0.6	1.3	-1.3	0.6	1.3	-0.7	1.3	3.7	0.6	1.4	1.5
2017	106.1	0.8	0.1	-0.4	-0.1	0.2	0.6	-0.3	4.4	2.4	1.7	1.8
2018	108.1	1.9	0.8	1.9	0.8	1.3	1.1	0.9	3.8	2.7	2.2	2.1
2018 Q1	107.0	1.1	0.0	0.0	-0.3	0.7	0.3	0.9	3.9	2.3	1.9	1.4
Q2	107.6	1.6	0.3	1.4	0.5	1.0	0.2	1.0	3.5	2.7	2.2	2.3
Q3	108.5	2.3	2.1	2.7	1.4	1.8	1.6	0.5	4.2	3.2	2.5	2.5
Q4	109.0	2.4	0.9	3.8	1.2	1.9	0.9	1.2	3.5	2.7	2.5	2.1
<b>Compensation per employee</b>												
2016	109.3	1.2	0.2	1.3	1.8	1.3	0.2	2.2	2.2	0.3	1.3	1.7
2017	111.1	1.6	1.6	1.4	1.2	1.6	1.8	0.2	4.1	3.2	1.4	1.3
2018	113.5	2.2	1.9	1.9	1.7	2.3	2.5	2.2	3.0	2.9	2.1	2.4
2018 Q1	112.6	1.9	2.3	1.6	1.1	2.0	2.8	1.8	2.8	2.6	2.0	1.8
Q2	113.3	2.2	2.1	2.1	1.4	2.3	2.9	2.0	2.3	2.8	2.0	1.8
Q3	114.1	2.5	2.0	2.3	2.4	2.5	2.4	2.6	3.5	3.2	2.3	3.2
Q4	114.6	2.2	1.2	1.6	1.7	2.1	1.9	2.4	3.2	2.9	2.4	2.9
<b>Labour productivity per person employed</b>												
2016	103.9	0.6	-1.0	2.6	1.1	0.0	0.9	0.8	-1.5	-0.2	-0.1	0.2
2017	104.7	0.8	1.5	1.9	1.3	1.5	1.2	0.5	-0.3	0.8	-0.3	-0.4
2018	105.0	0.3	1.1	0.0	0.9	0.9	1.4	1.3	-0.8	0.2	-0.1	0.3
2018 Q1	105.2	0.8	2.3	1.6	1.4	1.3	2.5	0.9	-1.0	0.3	0.1	0.4
Q2	105.2	0.5	1.7	0.8	1.0	1.3	2.6	1.0	-1.2	0.1	-0.1	-0.5
Q3	105.1	0.2	-0.1	-0.4	0.9	0.7	0.8	2.1	-0.7	0.0	-0.2	0.6
Q4	105.1	-0.2	0.3	-2.1	0.4	0.2	1.1	1.2	-0.3	0.2	-0.1	0.9
<b>Compensation per hour worked</b>												
2016	110.8	1.0	-0.4	1.2	1.7	0.9	0.2	1.8	1.9	0.0	1.3	1.5
2017	112.7	1.7	1.4	1.4	1.0	1.9	1.7	0.5	3.3	3.0	1.6	1.9
2018	114.8	1.9	1.4	1.8	0.9	2.1	2.1	1.8	2.3	2.4	2.0	1.8
2018 Q1	113.8	1.8	2.2	1.5	0.6	2.1	2.8	1.8	1.6	2.3	1.9	1.9
Q2	114.2	1.8	0.6	2.0	0.7	2.1	2.2	1.5	1.8	2.2	1.7	0.7
Q3	114.9	2.1	1.9	2.1	1.4	2.3	2.1	2.4	2.6	2.5	2.1	1.9
Q4	115.4	1.9	0.8	1.6	0.9	2.2	1.5	2.0	3.1	2.5	2.1	1.7
<b>Hourly labour productivity</b>												
2016	105.7	0.5	-1.2	2.5	0.8	0.0	1.1	0.4	-2.0	-0.4	-0.2	0.2
2017	106.8	1.0	1.9	1.9	1.2	1.8	1.3	0.9	-0.9	1.0	0.0	0.2
2018	107.0	0.2	0.5	-0.1	0.4	1.0	1.2	1.0	-1.0	-0.2	-0.2	0.2
2018 Q1	107.1	0.9	2.3	1.7	1.2	1.6	2.7	0.8	-2.1	0.3	0.1	0.9
Q2	106.9	0.3	0.7	0.7	0.6	1.5	2.3	0.5	-1.0	-0.4	-0.4	-1.0
Q3	106.6	-0.1	-0.8	-0.5	-0.1	0.7	0.6	1.8	-1.0	-0.7	-0.3	0.0
Q4	106.7	-0.4	0.0	-2.0	0.0	0.4	0.8	0.7	0.2	-0.2	-0.3	-0.1

Sources: Eurostat and ECB calculations.

## 5 Money and credit

### 5.1 Monetary aggregates <sup>1)</sup>

(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				Repos	Money market fund shares	Debt securities with a maturity of up to 2 years			
	Currency in circulation	Overnight deposits	Deposits with an agreed maturity of up to 2 years	Deposits redeemable at notice of up to 3 months								
1	2	3	4	5	6	7	8	9	10	11	12	
Outstanding amounts												
2016	1,075.3	6,082.8	7,158.1	1,330.6	2,221.0	3,551.5	10,709.7	69.6	523.1	86.6	679.2	11,388.9
2017	1,111.6	6,637.8	7,749.4	1,197.0	2,261.2	3,458.2	11,207.7	74.7	512.0	71.6	658.4	11,866.0
2018	1,162.6	7,118.8	8,281.5	1,128.2	2,294.2	3,422.5	11,703.9	74.6	523.3	71.6	669.5	12,373.4
2018 Q1	1,116.9	6,743.6	7,860.5	1,170.4	2,260.2	3,430.6	11,291.1	71.4	511.4	61.5	644.3	11,935.4
Q2	1,133.6	6,892.3	8,025.8	1,178.1	2,270.8	3,448.9	11,474.7	73.7	507.8	65.5	647.1	12,121.8
Q3	1,150.6	7,010.0	8,160.5	1,126.6	2,285.0	3,411.5	11,572.1	71.4	495.4	60.5	627.4	12,199.4
Q4	1,162.6	7,118.8	8,281.5	1,128.2	2,294.2	3,422.5	11,703.9	74.6	523.3	71.6	669.5	12,373.4
2018 Sep.	1,150.6	7,010.0	8,160.5	1,126.6	2,285.0	3,411.5	11,572.1	71.4	495.4	60.5	627.4	12,199.4
Oct.	1,154.4	7,044.8	8,199.3	1,137.8	2,290.3	3,428.1	11,627.3	72.0	505.7	60.9	638.6	12,266.0
Nov.	1,158.2	7,091.6	8,249.7	1,125.8	2,295.1	3,420.9	11,670.6	73.8	503.5	58.2	635.4	12,306.1
Dec.	1,162.6	7,118.8	8,281.5	1,128.2	2,294.2	3,422.5	11,703.9	74.6	523.3	71.6	669.5	12,373.4
2019 Jan.	1,167.7	7,125.7	8,293.4	1,123.7	2,298.7	3,422.4	11,715.8	74.9	516.6	62.8	654.3	12,370.1
Feb. <sup>(p)</sup>	1,172.8	7,194.6	8,367.4	1,124.8	2,304.6	3,429.4	11,796.7	70.7	514.9	56.4	642.0	12,438.7
Transactions												
2016	38.1	541.7	579.8	-106.1	16.1	-90.0	489.8	-4.3	34.3	18.3	48.3	538.0
2017	36.4	591.8	628.1	-110.5	34.3	-76.2	551.9	6.6	-10.9	-18.4	-22.7	529.2
2018	50.0	461.6	511.6	-71.5	45.0	-26.6	485.0	-3.5	11.3	-1.7	6.1	491.1
2018 Q1	5.3	102.5	107.8	-24.9	7.6	-17.3	90.5	-3.1	-0.6	-9.1	-12.8	77.7
Q2	16.6	137.7	154.3	4.8	9.8	14.6	169.0	-0.9	-3.2	2.3	-1.8	167.1
Q3	16.0	116.1	132.1	-51.8	14.1	-37.6	94.5	-2.4	-12.6	-4.7	-19.7	74.8
Q4	12.1	105.3	117.4	0.3	13.4	13.7	131.1	2.9	27.7	9.8	40.4	171.5
2018 Sep.	6.8	57.4	64.2	-14.1	3.9	-10.3	53.9	-0.5	-6.2	-2.6	-9.3	44.6
Oct.	3.9	31.4	35.2	9.2	5.5	14.7	49.9	0.3	10.3	-0.9	9.7	59.6
Nov.	3.8	47.7	51.5	-11.8	4.8	-7.0	44.5	1.8	-2.2	-2.7	-3.2	41.3
Dec.	4.5	26.2	30.7	2.9	3.1	6.0	36.7	0.9	19.6	13.5	33.9	70.6
2019 Jan.	5.0	10.2	15.3	-4.8	5.0	0.3	15.5	0.4	-7.6	-8.5	-15.7	-0.2
Feb. <sup>(p)</sup>	5.1	67.2	72.3	0.5	5.9	6.4	78.7	-4.3	-1.8	-5.4	-11.6	67.1
Growth rates												
2016	3.7	9.7	8.8	-7.4	0.7	-2.5	4.8	-5.8	7.0	26.1	7.6	5.0
2017	3.4	9.8	8.8	-8.4	1.5	-2.1	5.2	9.5	-2.1	-21.4	-3.3	4.7
2018	4.5	6.9	6.6	-6.0	2.0	-0.8	4.3	-4.6	2.2	-2.3	0.9	4.1
2018 Q1	2.5	8.4	7.5	-8.9	1.6	-2.2	4.3	-1.6	-4.7	-27.2	-7.1	3.6
Q2	3.5	8.1	7.4	-5.5	1.7	-0.9	4.7	5.3	-1.4	-16.3	-2.4	4.3
Q3	4.1	7.3	6.8	-7.4	1.8	-1.4	4.3	2.0	-6.7	-26.0	-8.1	3.5
Q4	4.5	6.9	6.6	-6.0	2.0	-0.8	4.3	-4.6	2.2	-2.3	0.9	4.1
2018 Sep.	4.1	7.3	6.8	-7.4	1.8	-1.4	4.3	2.0	-6.7	-26.0	-8.1	3.5
Oct.	4.1	7.3	6.8	-6.2	1.8	-1.0	4.4	-0.7	-3.8	-17.4	-5.0	3.8
Nov.	4.3	7.1	6.7	-6.7	2.0	-1.0	4.3	-8.2	-3.1	-22.4	-5.8	3.7
Dec.	4.5	6.9	6.6	-6.0	2.0	-0.8	4.3	-4.6	2.2	-2.3	0.9	4.1
2019 Jan.	4.7	6.4	6.2	-6.3	2.0	-0.8	4.0	-4.0	-0.1	5.9	-0.1	3.8
Feb. <sup>(p)</sup>	5.0	6.9	6.6	-4.9	2.2	-0.2	4.5	-7.0	1.0	-3.6	-0.4	4.3

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
<b>Outstanding amounts</b>													
2016	2,093.2	1,630.3	295.1	159.6	8.2	6,055.5	3,402.3	644.9	2,006.3	2.1	972.0	199.5	383.8
2017	2,255.7	1,801.7	285.8	159.1	9.1	6,305.6	3,698.9	561.9	2,044.1	0.7	994.3	204.0	411.1
2018	2,336.0	1,901.6	280.7	145.9	7.8	6,645.7	4,039.3	517.3	2,088.0	1.2	1,002.7	200.3	431.2
2018 Q1	2,260.5	1,821.6	274.0	157.2	7.6	6,376.3	3,787.0	543.5	2,044.2	1.6	983.2	210.6	415.1
Q2	2,296.8	1,855.2	277.9	156.7	7.0	6,462.2	3,870.0	535.2	2,055.9	1.1	1,010.3	220.0	425.6
Q3	2,323.5	1,891.3	268.0	157.3	6.8	6,538.7	3,945.5	524.6	2,067.6	1.1	982.2	211.8	436.8
Q4	2,336.0	1,901.6	280.7	145.9	7.8	6,645.7	4,039.3	517.3	2,088.0	1.2	1,002.7	200.3	431.2
2018 Sep.	2,323.5	1,891.3	268.0	157.3	6.8	6,538.7	3,945.5	524.6	2,067.6	1.1	982.2	211.8	436.8
Oct.	2,316.3	1,892.2	271.1	147.1	5.9	6,587.5	3,984.3	520.9	2,081.1	1.1	992.6	208.3	440.2
Nov.	2,322.4	1,892.2	275.6	146.5	8.1	6,610.7	4,005.1	517.9	2,086.6	1.2	1,001.0	208.3	443.8
Dec.	2,336.0	1,901.6	280.7	145.9	7.8	6,645.7	4,039.3	517.3	2,088.0	1.2	1,002.7	200.3	431.2
2019 Jan.	2,324.7	1,899.8	271.4	145.7	7.8	6,680.7	4,068.6	517.3	2,093.0	1.7	975.7	203.9	438.0
Feb. (p)	2,347.5	1,918.3	275.5	147.0	6.7	6,722.4	4,106.2	516.9	2,097.8	1.5	964.7	206.4	453.7
<b>Transactions</b>													
2016	131.8	156.6	-25.2	0.3	0.1	300.7	334.2	-46.5	13.9	-0.9	24.2	-28.4	19.1
2017	178.8	181.5	-3.1	-0.6	1.0	255.3	304.9	-81.6	33.4	-1.3	54.9	6.2	26.9
2018	89.1	100.4	-7.1	-2.8	-1.4	330.2	327.6	-45.0	47.2	0.5	-1.5	-4.5	18.2
2018 Q1	8.1	22.3	-10.8	-2.0	-1.4	73.0	81.2	-18.1	9.0	0.9	-9.4	6.8	3.6
Q2	28.9	29.1	1.1	-0.7	-0.7	83.6	81.7	-8.8	11.2	-0.5	19.9	9.1	9.9
Q3	26.4	36.1	-10.0	0.6	-0.2	76.5	75.5	-10.7	11.6	0.0	-29.6	-8.2	11.0
Q4	25.7	12.8	12.7	-0.7	0.9	97.2	89.1	-7.5	15.4	0.1	17.5	-12.2	-6.4
2018 Sep.	17.0	18.0	-1.0	-0.2	0.1	23.3	24.0	-3.7	3.8	-0.8	6.6	-2.6	2.4
Oct.	2.9	1.6	2.2	0.0	-1.0	38.5	37.5	-4.1	5.0	0.1	6.3	-3.8	2.4
Nov.	7.2	0.3	4.9	-0.2	2.2	23.1	20.9	-2.9	5.2	0.0	8.8	-0.4	3.8
Dec.	15.6	10.9	5.6	-0.6	-0.3	35.5	30.7	-0.5	5.2	0.0	2.5	-7.9	-12.6
2019 Jan.	-6.7	1.9	-9.0	0.4	0.0	35.0	29.3	0.1	5.1	0.5	-27.4	3.2	6.8
Feb. (p)	22.0	19.2	4.0	-0.2	-1.1	43.5	37.8	-0.6	6.4	-0.1	-13.9	2.5	15.2
<b>Growth rates</b>													
2016	6.8	10.4	-7.9	0.3	1.4	5.2	10.9	-6.7	0.7	-29.3	2.5	-12.5	5.2
2017	8.6	11.2	-1.1	-0.4	12.5	4.2	9.0	-12.7	1.7	-65.5	5.8	3.1	7.0
2018	4.0	5.6	-2.5	-1.8	-16.0	5.2	8.8	-8.0	2.3	65.1	-0.2	-2.2	4.4
2018 Q1	5.3	8.1	-7.7	-0.5	19.2	4.0	8.3	-12.5	1.7	-42.0	4.2	10.4	5.3
Q2	4.9	7.1	-5.4	-1.1	7.0	4.4	8.6	-10.8	1.7	-53.9	5.8	12.8	5.7
Q3	4.6	6.8	-6.8	-0.6	27.4	4.6	8.4	-9.9	1.9	-45.8	1.0	5.2	4.8
Q4	4.0	5.6	-2.5	-1.8	-16.0	5.2	8.8	-8.0	2.3	65.1	-0.2	-2.2	4.4
2018 Sep.	4.6	6.8	-6.8	-0.6	27.4	4.6	8.4	-9.9	1.9	-45.8	1.0	5.2	4.8
Oct.	4.2	6.0	-4.7	-1.0	3.9	4.7	8.4	-9.5	2.0	-45.2	3.0	2.8	5.1
Nov.	3.8	5.4	-3.4	-1.2	-1.2	4.9	8.6	-9.0	2.1	-42.4	0.3	1.6	6.9
Dec.	4.0	5.6	-2.5	-1.8	-16.0	5.2	8.8	-8.0	2.3	65.1	-0.2	-2.2	4.4
2019 Jan.	2.5	4.4	-7.0	-0.5	-23.0	5.3	8.8	-7.1	2.3	-6.2	-1.7	-1.4	5.3
Feb. (p)	4.3	5.9	-3.0	-0.3	-25.6	5.6	8.9	-6.0	2.5	-13.3	-3.6	-1.1	8.9

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 <sup>1)</sup>

(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 <sup>3)</sup>	To households <sup>4)</sup>	To financial corporations other than MFIs and ICPFs <sup>3)</sup>	To insurance corporations and pension funds			
	1	2	3	4	5	Adjusted loans <sup>2)</sup>	6	7	8	9	10	11
<b>Outstanding amounts</b>												
2016	4,389.3	1,084.0	3,292.1	12,881.4	10,711.1	10,982.1	4,311.4	5,449.3	836.7	113.5	1,387.4	782.9
2017	4,625.9	1,033.3	3,578.7	13,116.4	10,874.1	11,171.2	4,326.5	5,598.8	839.2	109.6	1,442.4	799.8
2018	4,686.9	1,007.4	3,668.1	13,418.6	11,127.4	11,481.7	4,409.2	5,741.5	848.8	127.9	1,520.1	771.0
2018 Q1	4,605.0	1,023.1	3,568.0	13,195.9	10,941.2	11,233.7	4,343.8	5,633.0	851.7	112.8	1,467.4	787.4
Q2	4,602.9	1,017.7	3,571.0	13,276.2	10,990.8	11,328.3	4,358.1	5,659.7	853.2	119.8	1,496.6	788.7
Q3	4,627.4	1,003.5	3,609.9	13,363.0	11,064.5	11,398.1	4,396.8	5,701.3	841.9	124.4	1,513.8	784.8
Q4	4,686.9	1,007.4	3,668.1	13,418.6	11,127.4	11,481.7	4,409.2	5,741.5	848.8	127.9	1,520.1	771.0
2018 Sep.	4,627.4	1,003.5	3,609.9	13,363.0	11,064.5	11,398.1	4,396.8	5,701.3	841.9	124.4	1,513.8	784.8
Oct.	4,612.0	1,000.6	3,597.4	13,393.8	11,089.9	11,423.2	4,404.2	5,716.2	848.9	120.8	1,524.7	779.1
Nov.	4,612.6	1,003.4	3,594.3	13,411.9	11,112.4	11,446.1	4,421.2	5,731.8	838.7	120.7	1,516.8	782.8
Dec.	4,686.9	1,007.4	3,668.1	13,418.6	11,127.4	11,481.7	4,409.2	5,741.5	848.8	127.9	1,520.1	771.0
2019 Jan.	4,685.1	1,006.7	3,666.9	13,452.4	11,156.7	11,498.8	4,409.5	5,758.5	861.0	127.7	1,523.0	772.7
Feb. <sup>(a)</sup>	4,685.4	1,001.0	3,672.5	13,500.7	11,177.9	11,524.4	4,425.2	5,769.6	856.7	126.3	1,533.1	789.7
<b>Transactions</b>												
2016	485.9	-34.5	520.3	319.7	235.8	259.9	82.5	121.1	43.2	-11.0	80.3	3.6
2017	289.7	-43.3	332.3	361.8	273.9	314.8	82.8	173.6	21.1	-3.5	64.3	23.6
2018	92.4	-28.2	120.7	372.8	304.6	373.5	122.9	167.3	-3.8	18.1	89.5	-21.2
2018 Q1	-31.0	-10.1	-20.8	115.7	98.1	94.4	41.3	40.1	13.6	3.2	27.5	-9.9
Q2	34.7	-6.0	40.3	85.6	55.5	103.7	17.1	34.9	-3.4	6.9	29.7	0.4
Q3	48.0	-16.2	64.5	105.2	90.9	87.1	48.6	49.8	-12.1	4.5	18.6	-4.2
Q4	40.7	4.0	36.7	66.3	60.1	88.3	15.9	42.6	-1.8	3.4	13.7	-7.5
2018 Sep.	6.7	-3.7	10.7	23.8	22.5	28.6	9.3	14.9	-6.0	4.2	-0.9	2.3
Oct.	-9.3	-3.0	-6.3	32.7	21.5	20.1	6.1	15.5	3.6	-3.7	12.6	-1.3
Nov.	-7.9	2.8	-11.7	27.0	30.3	32.5	22.6	18.4	-10.6	0.0	-6.4	3.2
Dec.	57.9	4.2	54.7	6.5	8.3	35.8	-12.7	8.7	5.1	7.2	7.6	-9.3
2019 Jan.	-11.7	-0.8	-10.9	33.1	33.4	19.6	2.9	18.2	12.5	-0.2	0.0	-0.3
Feb. <sup>(a)</sup>	12.0	-4.8	16.4	44.6	23.1	30.4	17.2	12.2	-4.9	-1.4	7.1	14.4
<b>Growth rates</b>												
2016	12.4	-3.1	18.7	2.5	2.3	2.4	1.9	2.3	5.5	-8.9	6.1	0.5
2017	6.6	-4.0	10.2	2.8	2.6	2.9	1.9	3.2	2.5	-3.1	4.6	3.0
2018	2.0	-2.7	3.4	2.8	2.8	3.4	2.9	3.0	-0.4	16.5	6.2	-2.7
2018 Q1	3.9	-4.0	6.5	2.6	2.6	3.0	2.3	3.0	2.0	-0.3	3.9	-0.1
Q2	4.0	-3.9	6.5	2.8	2.9	3.5	2.6	3.0	3.0	6.9	4.8	-1.4
Q3	3.1	-4.4	5.3	3.0	3.0	3.4	3.2	3.1	-0.4	11.7	5.9	-1.1
Q4	2.0	-2.7	3.4	2.8	2.8	3.4	2.9	3.0	-0.4	16.5	6.2	-2.7
2018 Sep.	3.1	-4.4	5.3	3.0	3.0	3.4	3.2	3.1	-0.4	11.7	5.9	-1.1
Oct.	2.7	-4.3	4.8	3.0	2.8	3.2	2.9	3.2	-0.7	7.4	7.2	-1.5
Nov.	2.1	-3.8	3.8	2.9	2.8	3.2	3.0	3.2	-1.9	5.2	6.6	-1.8
Dec.	2.0	-2.7	3.4	2.8	2.8	3.4	2.9	3.0	-0.4	16.5	6.2	-2.7
2019 Jan.	2.4	-2.7	3.9	2.5	2.5	3.0	2.2	3.2	-1.8	13.0	5.3	-2.5
Feb. <sup>(a)</sup>	2.5	-2.5	4.0	2.8	2.7	3.2	2.6	3.2	-1.5	10.6	5.3	-0.3

Source: ECB.

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

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

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

4) Including non-profit institutions serving households.

## 5 Money and credit

### 5.4 MFI loans to euro area non-financial corporations and households <sup>1)</sup>

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

	Non-financial corporations <sup>2)</sup>					Households <sup>3)</sup>				
	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 <sup>4)</sup>					Adjusted loans <sup>4)</sup>			
	1	2	3	4	5	6	7	8	9	10
<b>Outstanding amounts</b>										
2016	4,311.4	4,309.1	1,013.3	795.7	2,502.4	5,449.3	5,728.7	615.9	4,084.1	749.3
2017	4,326.5	4,364.8	987.7	820.4	2,518.4	5,598.8	5,865.5	654.0	4,217.0	727.9
2018	4,409.2	4,491.1	995.7	844.6	2,568.9	5,741.5	6,023.4	683.7	4,353.9	703.9
2018 Q1	4,343.8	4,381.2	997.8	820.8	2,525.2	5,633.0	5,904.5	663.3	4,243.8	725.9
Q2	4,358.1	4,425.0	986.0	828.3	2,543.8	5,659.7	5,940.5	669.8	4,273.2	716.6
Q3	4,396.8	4,464.3	1,000.1	836.2	2,560.5	5,701.3	5,978.6	678.3	4,311.6	711.4
Q4	4,409.2	4,491.1	995.7	844.6	2,568.9	5,741.5	6,023.4	683.7	4,353.9	703.9
2018 Sep.	4,396.8	4,464.3	1,000.1	836.2	2,560.5	5,701.3	5,978.6	678.3	4,311.6	711.4
Oct.	4,404.2	4,469.7	985.0	844.1	2,575.0	5,716.2	5,996.5	681.7	4,324.0	710.4
Nov.	4,421.2	4,486.5	989.2	850.9	2,581.0	5,731.8	6,010.7	685.6	4,336.4	709.8
Dec.	4,409.2	4,491.1	995.7	844.6	2,568.9	5,741.5	6,023.4	683.7	4,353.9	703.9
2019 Jan.	4,409.5	4,489.3	980.0	846.7	2,582.8	5,758.5	6,037.1	687.5	4,367.2	703.8
Feb. <sup>(p)</sup>	4,425.2	4,505.0	980.1	850.8	2,594.4	5,769.6	6,050.9	690.9	4,375.0	703.8
<b>Transactions</b>										
2016	82.5	100.4	-14.7	43.2	54.0	121.1	113.8	24.1	105.4	-8.4
2017	82.8	131.8	-0.3	38.0	45.0	173.6	165.5	45.1	134.3	-5.8
2018	122.9	171.1	19.2	33.4	70.4	167.3	188.8	40.1	136.5	-9.2
2018 Q1	41.3	39.0	17.6	6.1	17.6	40.1	45.5	11.3	27.7	1.1
Q2	17.1	48.2	-12.2	10.3	19.0	34.9	44.3	10.5	29.0	-4.6
Q3	48.6	47.8	16.4	9.5	22.6	49.8	47.7	10.3	40.4	-0.9
Q4	15.9	36.2	-2.7	7.4	11.2	42.6	51.3	8.1	39.3	-4.8
2018 Sep.	9.3	17.1	-0.1	2.3	7.0	14.9	14.0	1.9	13.2	-0.2
Oct.	6.1	3.8	-16.8	8.2	14.6	15.5	19.1	3.7	12.1	-0.3
Nov.	22.6	22.7	5.7	8.3	8.6	18.4	18.2	4.2	14.1	0.0
Dec.	-12.7	9.8	8.3	-9.1	-11.9	8.7	13.9	0.2	13.1	-4.6
2019 Jan.	2.9	-1.0	-13.8	2.3	14.4	18.2	15.2	4.1	13.8	0.3
Feb. <sup>(p)</sup>	17.2	17.1	0.2	4.7	12.3	12.2	16.8	3.5	8.4	0.2
<b>Growth rates</b>										
2016	1.9	2.4	-1.4	5.7	2.2	2.3	2.0	4.1	2.7	-1.1
2017	1.9	3.1	0.0	4.8	1.8	3.2	2.9	7.3	3.3	-0.8
2018	2.9	3.9	1.9	4.1	2.8	3.0	3.2	6.2	3.2	-1.3
2018 Q1	2.3	3.3	2.6	4.6	1.5	3.0	2.9	7.2	3.0	-0.4
Q2	2.6	4.1	1.4	5.5	2.2	3.0	3.0	7.2	3.1	-1.1
Q3	3.2	4.3	3.3	4.5	2.8	3.1	3.1	6.9	3.2	-0.8
Q4	2.9	3.9	1.9	4.1	2.8	3.0	3.2	6.2	3.2	-1.3
2018 Sep.	3.2	4.3	3.3	4.5	2.8	3.1	3.1	6.9	3.2	-0.8
Oct.	2.9	3.9	0.7	5.0	3.0	3.2	3.2	7.1	3.3	-0.7
Nov.	3.0	4.0	1.3	5.3	3.0	3.2	3.3	6.7	3.3	-0.8
Dec.	2.9	3.9	1.9	4.1	2.8	3.0	3.2	6.2	3.2	-1.3
2019 Jan.	2.2	3.4	-0.4	3.6	2.8	3.2	3.2	6.2	3.5	-1.2
Feb. <sup>(p)</sup>	2.6	3.7	0.0	4.4	3.0	3.2	3.3	6.1	3.5	-1.2

Source: ECB.

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

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

3) Including non-profit institutions serving households.

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

## 5 Money and credit

### 5.5 Counterparts to M3 other than credit to euro area residents <sup>1)</sup>

(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 <sup>2)</sup>	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 counterparties <sup>3)</sup>	Reverse repos to central counterparties <sup>3)</sup>	
1	2	3	4	5	6	7	8	9	10	
<b>Outstanding amounts</b>										
2016	307.7	6,955.9	2,089.5	70.9	2,145.9	2,649.6	1,124.8	257.0	205.9	121.6
2017	343.4	6,768.4	1,968.3	59.7	2,014.1	2,726.2	935.6	300.1	143.5	92.5
2018	378.7	6,814.4	1,941.3	56.0	2,096.0	2,721.2	1,025.0	436.0	187.0	194.9
2018 Q1	340.8	6,744.7	1,952.7	59.4	2,014.7	2,717.9	903.8	316.2	135.9	86.2
Q2	330.4	6,708.6	1,950.7	58.4	2,025.6	2,673.9	858.9	422.8	174.1	183.8
Q3	403.3	6,693.6	1,934.8	56.9	2,048.5	2,653.5	881.2	424.7	177.3	183.0
Q4	378.7	6,814.4	1,941.3	56.0	2,096.0	2,721.2	1,025.0	436.0	187.0	194.9
2018 Sep.	403.3	6,693.6	1,934.8	56.9	2,048.5	2,653.5	881.2	424.7	177.3	183.0
Oct.	398.1	6,795.5	1,936.3	56.6	2,104.4	2,698.2	993.7	460.0	167.1	174.3
Nov.	390.3	6,784.9	1,929.9	55.8	2,098.7	2,700.5	1,038.3	418.4	196.1	204.4
Dec.	378.7	6,814.4	1,941.3	56.0	2,096.0	2,721.2	1,025.0	436.0	187.0	194.9
2019 Jan.	377.2	6,861.7	1,939.7	55.6	2,116.6	2,749.8	1,069.9	401.5	199.0	208.4
Feb. <sup>(a)</sup>	409.0	6,878.7	1,936.7	55.6	2,146.0	2,740.4	1,116.3	424.0	198.1	210.5
<b>Transactions</b>										
2016	22.0	-122.9	-71.3	-8.6	-118.7	75.7	-278.3	-90.2	12.8	-12.0
2017	39.2	-74.9	-83.7	-6.6	-72.0	87.4	-92.3	-65.6	-60.9	-27.6
2018	39.0	47.4	-38.0	-4.9	16.9	73.4	65.0	47.4	21.8	24.2
2018 Q1	-2.7	8.8	-16.3	-1.4	9.3	17.2	53.2	-54.2	-7.6	-6.3
Q2	-10.4	-10.0	-4.8	-1.1	-15.0	11.0	-62.2	88.6	16.4	19.4
Q3	76.3	29.8	-16.2	-1.5	19.2	28.4	38.8	-11.2	3.2	-0.8
Q4	-24.1	18.8	-0.6	-0.9	3.4	16.8	35.0	24.1	9.7	11.9
2018 Sep.	15.3	28.0	-8.4	-0.5	28.1	8.8	46.2	11.1	-4.1	-6.0
Oct.	-5.5	14.2	0.0	-0.2	4.5	10.0	14.8	30.1	-10.3	-8.7
Nov.	-7.9	-4.6	-6.1	-0.9	-2.3	4.7	46.8	-37.0	29.0	30.0
Dec.	-10.8	9.1	5.5	0.2	1.3	2.1	-26.6	31.0	-9.1	-9.5
2019 Jan.	-1.5	20.2	-5.8	-0.4	20.6	5.8	28.4	-31.4	12.0	13.6
Feb. <sup>(a)</sup>	31.6	19.1	-3.4	0.0	25.6	-3.0	43.8	17.4	-0.9	2.1
<b>Growth rates</b>										
2016	7.8	-1.7	-3.4	-10.9	-5.3	2.9	-	-	6.3	-9.0
2017	12.6	-1.1	-4.0	-9.7	-3.4	3.3	-	-	-29.7	-22.7
2018	11.3	0.7	-1.9	-8.1	0.8	2.8	-	-	11.0	2.2
2018 Q1	11.9	-0.6	-4.1	-9.8	-1.5	3.2	-	-	-25.6	-22.2
Q2	6.6	-0.9	-3.2	-10.8	-2.5	2.4	-	-	-3.6	-18.0
Q3	14.4	0.0	-2.8	-9.3	0.0	2.3	-	-	7.7	4.9
Q4	11.3	0.7	-1.9	-8.1	0.8	2.8	-	-	11.0	2.2
2018 Sep.	14.4	0.0	-2.8	-9.3	0.0	2.3	-	-	7.7	4.9
Oct.	18.1	0.6	-1.7	-8.7	0.6	2.5	-	-	-9.9	-22.0
Nov.	24.7	0.6	-2.1	-9.1	0.8	2.6	-	-	-0.1	-24.6
Dec.	11.3	0.7	-1.9	-8.1	0.8	2.8	-	-	11.0	2.2
2019 Jan.	18.9	0.8	-1.9	-7.7	1.0	2.9	-	-	28.0	22.7
Feb. <sup>(a)</sup>	19.7	1.4	-1.9	-7.1	2.9	2.7	-	-	35.9	28.0

Source: ECB.

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

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

3) Not adjusted for seasonal effects.

## 6 Fiscal developments

### 6.1 Deficit/surplus

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

	Deficit (-)/surplus (+)					Memo item: Primary deficit (-)/surplus (+)
	Total	Central government	State government	Local government	Social security funds	
	1	2	3	4	5	6
2014	-2.5	-2.1	-0.2	0.0	-0.1	0.1
2015	-2.0	-1.9	-0.2	0.1	-0.1	0.3
2016	-1.6	-1.7	-0.1	0.2	0.0	0.6
2017	-1.0	-1.3	0.0	0.2	0.1	1.0
2017 Q4	-1.0	.	.	.	.	1.0
2018 Q1	-0.8	.	.	.	.	1.2
Q2	-0.5	.	.	.	.	1.4
Q3	-0.4	.	.	.	.	1.5

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			Compensation of employees	Intermediate consumption	Interest	Social benefits			
	1	2	3	4	5	6	7	8	9	10	11	12	13
2014	46.7	46.2	12.5	13.1	15.4	0.5	49.1	45.2	10.2	5.3	2.6	23.0	3.9
2015	46.2	45.7	12.5	13.0	15.2	0.5	48.3	44.4	10.0	5.2	2.3	22.7	3.9
2016	46.0	45.5	12.6	12.9	15.2	0.5	47.5	44.0	9.9	5.2	2.1	22.7	3.6
2017	46.1	45.7	12.8	12.9	15.2	0.4	47.0	43.3	9.8	5.1	2.0	22.5	3.8
2017 Q4	46.1	45.7	12.8	12.9	15.2	0.4	47.0	43.3	9.8	5.1	2.0	22.5	3.8
2018 Q1	46.1	45.7	12.9	12.9	15.2	0.4	46.9	43.1	9.8	5.1	1.9	22.4	3.7
Q2	46.2	45.8	12.9	12.9	15.2	0.4	46.6	43.0	9.8	5.1	1.9	22.4	3.7
Q3	46.2	45.8	12.9	12.9	15.2	0.4	46.6	43.0	9.8	5.1	1.9	22.3	3.6

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	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 currencies	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2014	91.8	2.7	17.1	71.9	43.9	25.8	47.9	9.8	82.0	18.8	31.8	41.1	89.7	2.1
2015	89.9	2.8	16.2	70.9	44.1	27.3	45.7	9.1	80.8	17.5	31.2	41.2	87.8	2.1
2016	89.1	2.7	15.4	71.0	46.6	30.5	42.5	8.8	80.3	17.1	29.9	42.1	87.0	2.1
2017	86.8	2.6	14.2	70.0	47.3	31.9	39.5	8.0	78.8	15.9	28.8	42.2	85.0	1.8
2017 Q4	86.8	2.6	14.2	70.0	.	.	.	.	.	.	.	.	.	.
2018 Q1	86.9	2.6	14.0	70.3	.	.	.	.	.	.	.	.	.	.
Q2	86.3	2.6	13.7	70.0	.	.	.	.	.	.	.	.	.	.
Q3	86.2	2.6	13.5	70.0	.	.	.	.	.	.	.	.	.	.

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 <sup>1)</sup>

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

	Change in debt-to-GDP ratio <sup>2)</sup>	Primary deficit (+)/surplus (-)	Deficit-debt adjustment								Interest-growth differential	Memo item: Borrowing requirement
			Total	Transactions in main financial assets					Revaluation effects and other changes in volume	Other		
				Total	Currency and deposits	Loans	Debt securities	Equity and investment fund shares				
	1	2	3	4	5	6	7	8	9	10	11	12
2014	0.2	-0.1	-0.2	-0.4	0.2	-0.4	-0.3	0.0	0.1	0.2	0.5	2.3
2015	-1.9	-0.3	-0.8	-0.5	0.2	-0.3	-0.3	-0.1	0.0	-0.4	-0.8	1.2
2016	-0.8	-0.6	0.1	0.2	0.3	-0.1	0.0	0.1	0.0	-0.1	-0.3	1.6
2017	-2.2	-1.0	-0.2	0.3	0.5	0.0	-0.2	0.1	-0.1	-0.3	-1.0	0.9
2017 Q4	-2.2	-1.0	-0.2	0.4	0.5	0.0	-0.2	0.1	-0.1	-0.4	-1.0	0.9
2018 Q1	-2.4	-1.2	-0.1	0.5	0.5	0.0	-0.1	0.1	-0.1	-0.4	-1.1	0.8
Q2	-2.9	-1.4	-0.2	0.3	0.2	-0.1	-0.1	0.2	-0.1	-0.3	-1.3	0.5
Q3	-2.1	-1.5	0.5	0.8	0.6	0.0	0.0	0.2	-0.1	-0.2	-1.1	1.0

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 <sup>1)</sup>

(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 <sup>2)</sup>					Average residual maturity in years <sup>3)</sup>	Average nominal yields <sup>4)</sup>							
	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	13.0	11.4	3.9	1.5	0.4	7.3	2.3	1.1	-0.1	2.7	2.5	0.4	0.9	
2017 Q4	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 Q1	12.9	11.3	4.2	1.6	0.4	7.2	2.4	1.1	-0.2	2.8	2.5	0.4	1.1	
Q2	12.8	11.2	3.6	1.6	0.4	7.3	2.4	1.1	-0.2	2.8	2.5	0.4	0.9	
Q3	13.1	11.5	3.8	1.6	0.4	7.3	2.3	1.1	-0.1	2.7	2.6	0.4	0.9	
2018 Sep.	13.1	11.5	3.8	1.6	0.4	7.3	2.3	1.1	-0.1	2.7	2.6	0.4	0.9	
Oct.	13.3	11.8	3.6	1.6	0.4	7.3	2.3	1.1	-0.1	2.7	2.5	0.4	1.0	
Nov.	13.4	11.9	3.7	1.6	0.4	7.3	2.3	1.1	-0.1	2.7	2.5	0.5	1.0	
Dec.	13.0	11.4	3.9	1.5	0.4	7.3	2.3	1.1	-0.1	2.7	2.5	0.4	0.9	
2019 Jan.	13.2	11.7	4.1	1.5	0.4	7.3	2.3	1.1	-0.1	2.7	2.5	0.4	0.9	
Feb.	13.0	11.5	4.1	1.5	0.4	7.3	2.3	1.1	-0.1	2.7	2.5	0.4	0.9	

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 1	Germany 2	Estonia 3	Ireland 4	Greece 5	Spain 6	France 7	Italy 8	Cyprus 9	
Government deficit (-)/surplus (+)										
2014	-3.1	0.6	0.7	-3.6	-3.6	-6.0	-3.9	-3.0	-9.0	
2015	-2.5	0.8	0.1	-1.9	-5.6	-5.3	-3.6	-2.6	-1.3	
2016	-2.4	0.9	-0.3	-0.5	0.5	-4.5	-3.5	-2.5	0.3	
2017	-0.9	1.0	-0.4	-0.2	0.8	-3.1	-2.7	-2.4	1.8	
2017 Q4	-0.9	1.0	-0.4	-0.2	0.8	-3.1	-2.7	-2.4	1.8	
2018 Q1	-0.9	1.3	-0.6	-0.3	1.1	-2.9	-2.7	-2.2	2.4	
Q2	-0.3	1.9	-0.2	-0.3	0.9	-2.7	-2.8	-1.9	3.0	
Q3	-0.1	1.9	0.0	-0.1	0.8	-2.7	-2.7	-1.8	-3.9	
Government debt										
2014	107.6	74.5	10.5	104.1	178.9	100.4	94.9	131.8	108.0	
2015	106.5	70.8	9.9	76.8	175.9	99.3	95.6	131.6	108.0	
2016	106.1	67.9	9.2	73.4	178.5	99.0	98.2	131.4	105.5	
2017	103.4	63.9	8.7	68.4	176.1	98.1	98.5	131.2	96.1	
2017 Q4	103.4	63.9	8.7	68.4	176.1	98.1	98.5	131.3	95.8	
2018 Q1	106.4	62.7	8.5	69.3	177.9	98.7	99.4	132.9	92.9	
Q2	105.9	61.5	8.3	69.2	177.5	98.1	99.1	133.3	103.0	
Q3	105.4	61.0	8.0	68.7	182.3	98.3	99.5	133.3	110.2	
	Latvia 10	Lithuania 11	Luxembourg 12	Malta 13	Netherlands 14	Austria 15	Portugal 16	Slovenia 17	Slovakia 18	Finland 19
Government deficit (-)/surplus (+)										
2014	-1.5	-0.6	1.3	-1.7	-2.2	-2.7	-7.2	-5.5	-2.7	-3.2
2015	-1.4	-0.3	1.3	-1.0	-2.0	-1.0	-4.4	-2.8	-2.6	-2.8
2016	0.1	0.3	1.6	0.9	0.0	-1.6	-2.0	-1.9	-2.2	-1.7
2017	-0.6	0.5	1.4	3.5	1.2	-0.8	-3.0	0.1	-0.8	-0.7
2017 Q4	-0.6	0.5	1.4	3.5	1.2	-0.8	-3.0	0.1	-0.8	-0.7
2018 Q1	0.0	0.4	1.4	3.1	1.6	-0.6	-0.7	0.5	-0.7	-0.7
Q2	0.3	0.7	1.5	3.9	1.9	0.2	-1.0	0.6	-0.7	-0.9
Q3	0.0	0.6	1.9	3.6	2.1	0.1	0.0	0.7	-0.7	-0.8
Government debt										
2014	40.9	40.5	22.7	63.7	67.9	84.0	130.6	80.4	53.5	60.2
2015	36.8	42.6	22.2	58.6	64.6	84.8	128.8	82.6	52.2	63.6
2016	40.3	39.9	20.7	56.3	61.9	83.0	129.2	78.7	51.8	63.0
2017	40.0	39.4	23.0	50.9	57.0	78.3	124.8	74.1	50.9	61.3
2017 Q4	40.0	39.4	23.0	50.1	57.0	78.3	124.8	74.1	50.9	61.3
2018 Q1	35.5	36.0	22.2	49.7	55.1	77.2	125.4	75.5	50.9	59.9
Q2	36.9	35.0	22.0	48.8	54.0	76.5	124.8	72.6	51.9	59.5
Q3	37.0	34.9	21.7	45.7	52.9	75.5	124.7	71.0	51.5	58.8

Source: Eurostat.

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For specific terminology please refer to the [ECB glossary](#) (available in English only).

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