EUROPEAN CENTRAL BANK

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Economic and monetary developments

Overview

At its monetary policy meeting on 12 March, the Governing Council decided on a comprehensive package of monetary policy measures. Together with the substantial monetary policy stimulus already in place, these measures will support liquidity and funding conditions for households, businesses and banks and will help to preserve the smooth provision of credit to the real economy. Since the last Governing Council meeting in late January, the spread of the coronavirus (COVID-19) has been a major shock to the growth prospects of the global and euro area economies and has heightened market volatility. Even if ultimately temporary in nature, it will have a significant impact on economic activity. In particular, it will slow down production as a result of disrupted supply chains and reduce domestic and foreign demand, especially through the adverse impact of the necessary containment measures. In addition, the heightened uncertainty negatively affects expenditure plans and their financing. The risks surrounding the euro area growth outlook are clearly on the downside. In addition to the previously identified risks related to geopolitical factors, rising protectionism and vulnerabilities in emerging markets, the spread of the coronavirus adds a new and substantial source of downside risk to the growth outlook. Against this background, the ECB's Governing Council took a number of policy decisions to preserve the monetary stance and to underpin the transmission of monetary policy to the real economy.

Economic and monetary assessment at the time of the Governing Council meeting of 12 March 2020

The unfolding COVID-19 epidemic is worsening the outlook for the global economy as embedded in the March 2020 ECB staff macroeconomic projections. Developments since the cut-off date for the projections suggest that the downside risk to global activity related to the COVID-19 outbreak has partly materialised, implying that global activity this year will be weaker than envisaged in the projections. The outbreak hit the global economy as signs of a stabilisation in activity and trade had started to emerge and the signing of the so-called Phase 1 trade agreement between the United States and China, accompanied by cuts in tariffs, had reduced uncertainty. Looking further ahead, the projected global recovery is expected to gain only modest traction. It will hinge on the recovery in a number of still vulnerable emerging market economies, while the projected cyclical slowdown in advanced economies and the structural transition to a slower growth trajectory in China will weigh on the medium-term outlook. The risks to global activity have changed, but their balance remains tilted to the downside. At the moment, the most acute downside risk relates to the potentially broader and longer impact of the COVID-19 outbreak as it continues to evolve. Global inflationary pressures remain contained.

Global risk sentiment deteriorated sharply and market volatility surged as the coronavirus spread around the world towards the end of the review period (12

December 2019 to 11 March 2020). Euro area long-term risk-free rates declined markedly to levels significantly lower than at the start of the period. The forward curve of the euro overnight index average (EONIA) shifted sharply downwards; its inversion at shorter to medium-term maturities signalled market pricing of further monetary policy accommodation. In line with the sharp rise in global risk aversion, euro area equity prices decreased strongly, while sovereign and corporate bond spreads widened. In volatile foreign exchange markets, the euro appreciated substantially against the currencies of 38 of the euro area's most important trading partners.

Euro area real GDP growth remained subdued at 0.1%, quarter on quarter, in the fourth quarter of 2019, following growth of 0.3% in the previous quarter, driven by ongoing weakness in the manufacturing sector and slowing investment growth. Incoming economic data and survey information point to euro area growth dynamics at low levels, not yet fully reflecting developments related to the coronavirus, which started to spread across continental Europe at the end of February, adversely affecting economic activity. Looking beyond the disruptions stemming from the spreading of the coronavirus, euro area growth is expected to regain traction over the medium term, supported by favourable financing conditions, the euro area fiscal stance and the expected resumption in global activity.

According to the March 2020 ECB staff macroeconomic projections for the euro area, annual real GDP is expected to increase by 0.8% in 2020, 1.3% in 2021 and 1.4% in 2022. Compared with the December 2019 Eurosystem staff macroeconomic projections, the outlook for real GDP growth has been revised down by 0.3 percentage points for 2020 and by 0.1 percentage points for 2021, mainly on account of the coronavirus outbreak, although the recent rapid spread of the virus in the euro area is only partly reflected. The risks surrounding the euro area growth outlook are therefore clearly on the downside. The spread of the coronavirus adds a new and substantial source of downside risk to the growth outlook, in addition to risks related to geopolitical factors, rising protectionism and vulnerabilities in emerging markets.

According to Eurostat's flash estimate, euro area annual HICP inflation decreased to 1.2% in February 2020, from 1.4% in January. On the basis of the sharp decline in current and futures prices for oil, headline inflation is likely to decline considerably over the coming months. This assessment is only partly reflected in the March 2020 ECB staff macroeconomic projections for the euro area, which foresee annual HICP inflation at 1.1% in 2020, 1.4% in 2021 and 1.6% in 2022, and are broadly unrevised compared to the December 2019 Eurosystem staff projections. Over the medium term, inflation will be supported by the ECB's monetary policy measures. The implications of the coronavirus for inflation are surrounded by high uncertainty, given that downward pressures linked to weaker demand may be offset by upward pressures related to supply disruptions. The recent sharp decline in oil prices poses significant downside risks to the short-term inflation outlook.

Monetary dynamics have moderated from comfortable levels since late summer 2019. Credit to the private sector has continued to display divergent developments across loan categories. While lending to households has remained resilient, lending to firms has moderated. Favourable bank funding and lending conditions have continued to support lending and thereby economic growth. Euro area

firms' total net external financing has stabilised, supported by favourable debt financing costs. However, the recent increase in risk-off sentiment is likely to cause non-bank financing conditions for non-financial corporations to deteriorate.

The euro area general government budget balance is projected to decline in 2020 and 2021 and to stabilise in 2022. The decline can be largely attributed to lower primary surpluses. These developments are also reflected in the projections in an expansionary fiscal stance in both 2020 and 2021, followed by a broadly neutral stance in 2022. Despite the relatively expansionary fiscal stance, in the projections the euro area government debt-to-GDP ratio is expected to remain on a gradual downward path, owing to a favourable interest rate-growth differential and a somewhat positive primary balance for the entire period. Developments related to the spread of the coronavirus (COVID-19) after the projections were finalised point to a clear worsening of the outlook for the fiscal stance. In addition to previously announced fiscal policies, the Eurogroup's commitment to joint and coordinated policy action should be strongly supported in the light of the spread of the virus.

The monetary policy package

On 12 March 2020 the Governing Council decided on a comprehensive package of monetary policy measures. The monetary policy response encompassed three key elements: first, safeguarding liquidity conditions in the banking system through a series of favourably-priced longer-term refinancing operations (LTROs); second, protecting the continued flow of credit to the real economy through a fundamental recalibration of targeted longer-term refinancing operations (TLTROs); and, third, preventing financing conditions for the economy tightening in a pro-cyclical way via an increase in the asset purchase programme (APP).[1]

1. In times of heightened uncertainty, it is essential that liquidity is provided on generous terms to the financial system to prevent liquidity squeezes and pressure on the price of liquidity, including in times when the coronavirus may pose operational risk challenges for participants in the financial system. The Governing Council therefore decided to conduct, temporarily, additional LTROs to provide immediate liquidity support to the euro area financial system. Although the Governing Council does not see material signs of strains in money markets or liquidity shortages in the banking system, these operations will provide an effective backstop in case of need. The operations will be carried out through a fixed rate tender procedure with full allotment. They will be priced very attractively, with an interest rate that is equal to the average rate on the deposit facility. These new LTROs will provide liquidity on favourable terms to bridge the period until the TLTRO III operation in June 2020.

2. With revenues and expenditure plans of households and firms being hit by the spread of the coronavirus, it is crucial to support bank lending to those that are affected most by the economic ramifications, in particular small and

[1] For further details, see Lane, P.R., "The Monetary Policy Package: An Analytical Framework", *The ECB Blog*, ECB, 13 March 2020.

medium-sized enterprises. Hence, the Governing Council decided to apply considerably more favourable terms during the period from June 2020 to June 2021 to all TLTRO III operations outstanding during that time. Throughout this period, the interest rate on these TLTRO III operations will be 25 basis points below the average rate applied in the Eurosystem's main refinancing operations. For counterparties that maintain their levels of credit provision, the rate applied in these operations will be lower, and, over the period ending in June 2021, can be as low as 25 basis points below the average interest rate on the deposit facility. Moreover, the maximum total amount that counterparties will henceforth be entitled to borrow in TLTRO III operations has been raised to 50% of their stock of eligible loans as at 28 February 2019. This raises the total possible borrowing volume under this programme by more than €1 trillion to almost €3 trillion in total. Overall, the new conditions for the TLTRO will help to significantly ease the funding conditions that determine the supply of credit provided by banks to firms and households. In this context, the Governing Council has mandated the Eurosystem committees to investigate collateral easing measures to ensure that counterparties continue to be able to make full use of the ECB's funding support.

3. It is essential to ensure a sufficiently accommodative monetary policy stance, especially in an environment of high uncertainty and elevated financial volatility. It is against this background that the Governing Council also decided to add a temporary envelope of additional net asset purchases of €120 billion until the end of the year, ensuring a strong contribution from the private sector purchase programmes. Net asset purchases continue to be expected to run for as long as necessary to reinforce the accommodative impact of the ECB's policy rates, and to end shortly before the Governing Council starts raising the key ECB interest rates. In combination with the existing APP, this temporary envelope will support financial conditions more broadly and thereby also ease the interest rates that matter for the real economy. Moreover, the higher pace of purchases will ensure that the Eurosystem shows a more robust presence in the market during these times of heightened volatility, including the full use of the flexibility embedded in the APP to respond to market conditions. This could imply temporary fluctuations in the distribution of purchase flows both across asset classes and across countries in response to "flight to safety" shocks and liquidity shocks. Such deviations from the steady-state cross-country allocation are within the remit of the programme, provided the capital key continues to anchor the total stock of the Eurosystem's holdings in the long run.

4. In addition, the Governing Council decided to keep the key ECB interest rates unchanged. They are expected to remain at their present or lower levels until the inflation outlook robustly converges to a level sufficiently close to, but below, 2% within the projection horizon, and such convergence has been consistently reflected in underlying inflation dynamics.

5. Finally, the Governing Council also intends to continue reinvesting, in full, the principal payments from maturing securities purchased under the APP for an extended period of time past the date when it starts raising the key ECB interest

rates, and in any case for as long as necessary to maintain favourable liquidity conditions and an ample degree of monetary accommodation.

In view of current developments, the Governing Council will continue to monitor closely the implications of the spread of the coronavirus for the economy, for medium-term inflation and for the transmission of monetary policy. The Governing Council stands ready to adjust all of its instruments, as appropriate, to ensure that inflation moves towards its aim in a sustained manner, in line with its commitment to symmetry.

At the same time, an ambitious and coordinated fiscal stance is now needed in view of the weakened outlook and to safeguard against the further materialisation of downside risks. The Governing Council welcomes the measures already taken by several governments to ensure sufficient health sector resources and to provide support to affected companies and employees. In particular, measures such as providing credit guarantees are needed to complement and reinforce the monetary policy measures taken by the Governing Council.

Addendum on the decisions taken by the Governing Council on 18 March

The coronavirus pandemic represents a collective public health emergency that has few precedents in recent history. It is also an extreme economic shock that requires an ambitious, coordinated and urgent policy reaction on all fronts. On 18 March, the Governing Council announced a new pandemic emergency purchase programme (PEPP) to address the unprecedented situation the euro area is facing. The programme is temporary and will allow the ECB to safeguard the transmission of monetary policy and ultimately its capacity to deliver price stability in the euro area. In particular, developments in financial markets had led to a tightening in financing conditions, in particular at the longer end of the maturity spectrum. The risk-free curve had moved up and the sovereign yield curves – which are key to the pricing of all assets – had increased everywhere and become more dispersed. In the fulfilment of its mandate, the Governing Council took the following decisions:

1. To launch a new temporary asset purchase programme of private and public sector securities to counter the serious risks to the monetary policy transmission mechanism and the outlook for the euro area posed by the outbreak and escalating diffusion of COVID-19.

   This new pandemic emergency purchase programme (PEPP) will have an overall envelope of €750 billion. Purchases will be conducted until the end of 2020 and will include all the asset categories eligible under the existing asset purchase programme (APP).

   For the purchases of public sector securities, the benchmark allocation across jurisdictions will continue to be the capital key of the national central banks. At the same time, purchases under the new PEPP will be conducted in a flexible manner. This allows for fluctuations in the distribution of purchase flows over time, across asset classes and among jurisdictions.

   A waiver of the eligibility requirements for securities issued by the Greek government will be granted for purchases under PEPP.

   The Governing Council will terminate net asset purchases under PEPP once it judges that the coronavirus crisis phase is over, but in any case not before the end of the year.

2. To expand the range of eligible assets under the corporate sector purchase programme (CSPP) to non-financial commercial paper, making all commercial papers of sufficient credit quality eligible for purchase under the CSPP.

3. To ease the collateral standards by adjusting the main risk parameters of the collateral framework. In particular, we will expand the scope of Additional Credit Claims (ACC) to include claims related to the financing of the corporate sector. This will ensure that counterparties can continue to make full use of the Eurosystem's refinancing operations.

The Governing Council of the ECB is committed to playing its role in supporting all citizens of the euro area through this extremely challenging time. To that end, the ECB will ensure that all sectors of the economy can benefit from supportive financing conditions that enable them to absorb this shock. This applies equally to families, firms, banks and governments.

The Governing Council will do everything necessary within its mandate. The Governing Council is fully prepared to increase the size of its asset purchase programmes and adjust their composition, by as much as necessary and for as long as needed. It will explore all options and all contingencies to support the economy through this shock.

To the extent that some self-imposed limits might hamper action that the ECB is required to take in order to fulfil its mandate, the Governing Council will consider revising them to the extent necessary to make its action proportionate to the risks that we face. The ECB will not tolerate any risks to the smooth transmission of its monetary policy in all jurisdictions of the euro area.

1 External environment

The unfolding coronavirus (COVID-19) epidemic has worsened the outlook for the global economy as embedded in the March 2020 ECB staff macroeconomic projections. Developments since the cut-off date for the projections suggest that the downside risk to global activity related to the COVID-19 outbreak has partly materialised, implying that global activity this year will be weaker than envisaged in the aforementioned staff macroeconomic projections. The outbreak hit the global economy as signs of a stabilisation in activity and trade had started to emerge and the signature of the so-called Phase 1 trade agreement between the United States and China, accompanied by cuts in tariffs, had reduced uncertainty. Looking beyond this year, global economic activity is expected to recover yet gain only modest traction. It will hinge on the recovery in a number of still vulnerable EMEs, while the projected cyclical slowdown in advanced economies and the structural transition to a slower growth trajectory in China will weigh on the medium-term outlook. The risks to global activity have changed, but their balance remains tilted to the downside. At the moment, the most acute downside risk relates to the potentially broader and longer impact of the COVID-19 outbreak as it continues to evolve. Global inflationary pressures remain contained.

Global economic activity and trade

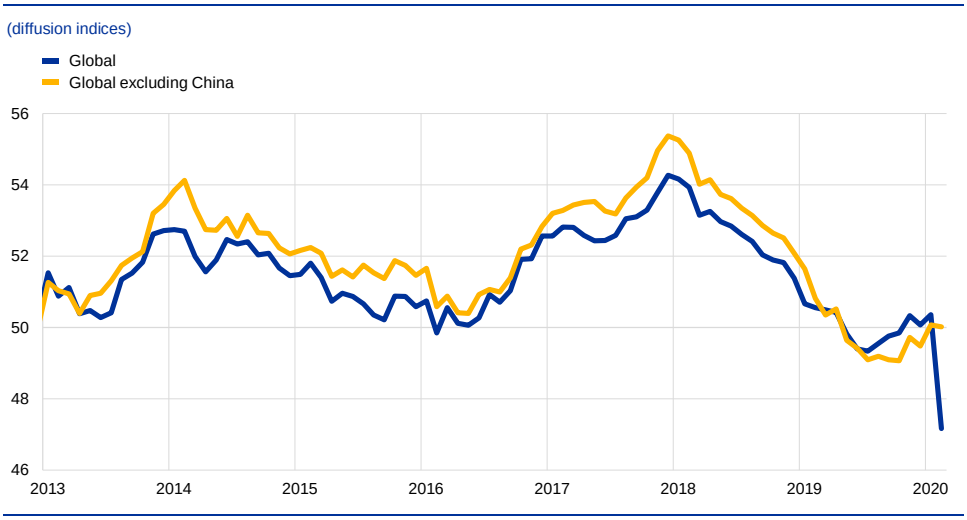
The spreading of COVID-19 has clouded the global outlook. As the situation is still unfolding by the day, it is very difficult to estimate how long disruptions to production and trade will last and how consumers across the globe will respond to the related uncertainty. Moreover, the outbreak comes after a period of weak global activity. Global real GDP growth (excluding the euro area) declined to 2.9% last year, marking its slowest pace since the Great Recession. This slowdown was broader and more pronounced compared to the most recent episodes in 2012-13 and 2015-16. The key factor behind it was the recurrent escalation of trade tensions, which – through increased uncertainty – prompted firms to postpone investment and consumers to delay purchases of durable goods. This in turn resulted in a sharp decline in global manufacturing activity and trade. In addition, several EMEs were hit by idiosyncratic shocks, which further accentuated the deceleration in global activity last year. At the same time, a number of key advanced and emerging market economies deployed demand stimulating policies, thereby limiting both the pace and depth of the slowdown in growth in 2019.

The outbreak hit the global economy as signs of a stabilisation in activity and trade had started to emerge. The global composite output Purchasing Managers' Index (PMI) (excluding the euro area) increased in January, supported by better readings for both the manufacturing and services sectors. Stronger output in the manufacturing sector signalled that a nascent recovery – following a protracted period of weakness – could be underway. These signals were mostly visible for EMEs, while developments in advanced economies have been more mixed. This trend was recently interrupted by the COVID-19 outbreak, which Chinese authorities sought to contain by extending the Lunar New Year holidays and imposing strict quarantine

measures in Hubei province, the epicentre of the outbreak. As a result of these measures, manufacturing activity in China plunged in February and some negative spillovers were felt across the Asia-Pacific region, which is intrinsically linked to China through supply chains and is also one of the most popular destinations for Chinese tourists. Yet wider global spillovers in February were likely limited, as suggested by the relative stability of the global manufacturing PMI excluding China (see Chart 1). However, as production in China is only gradually returning to normal and many countries have imposed measures to contain the spreading of the virus, a more persistent and broader impact on global manufacturing activity in the near term can be expected.

Chart 1

Global manufacturing PMI



Sources: Markit and Haver Analytics.
Notes: The latest observations are for February 2020.

Following a period of easing, global financial conditions have markedly tightened more recently. The previous easing period followed the announcement of the aforementioned Phase 1 trade agreement, which in turn spurred a rally in risky assets. This rally was interrupted abruptly around mid-February when global equity markets plunged as the outbreak continued to weigh on China and spread to other countries. Since the cut-off date for the March 2020 ECB staff macroeconomic projections, global financial conditions markedly tightened both in advanced economies and EMEs as the impact of the sharp correction in equity markets and the increase in corporate bond spreads was only partly outweighed by declining risk-free rates. In EMEs the tightening was less pronounced compared to recent episodes of financial stress, such as in the summer of 2018, as EMEs' exchange rates remained broadly stable against the US dollar. The latter mainly reflected the actual and expected monetary policy easing measures taken by the Federal Reserve which weighed on the US dollar, offsetting the upward pressure emanating from the safe haven inflows into US Treasuries.

The March 2020 ECB staff macroeconomic projections envisage the global recovery to gain only modest traction over the projection horizon. In the projections, global activity excluding the euro area is projected to reach 3.1% this year,

slightly higher than the 2.9% estimated for 2019. Over the medium term, global growth is expected to increase slightly to 3.5% and 3.4% in 2021 and 2022 respectively, below its long-term average of 3.8%. Compared to the December 2019 Eurosystem staff macroeconomic projections, global growth projections for 2020 are broadly unchanged, as upward revisions related to lower trade tariffs are offset by downward revisions in 2020Q1 owing to the virus outbreak in China. In the March projections, the medium-term outlook for the global economy hinged on the recovery in a number of EMEs. Yet the path to recovery in these countries is judged to be fragile amid external headwinds which, together with domestic political instability, could derail their recovery prospects. Developments since the cut-off date indeed suggest that an imminent downside risk related to the COVID-19 impact on the global economy has partly materialised. This in turn implies that global activity this year is very likely to be weaker than envisaged in the March 2020 ECB staff macroeconomic projections.

In the United States, economic activity was expected to remain steady in the near term. Real GDP grew by 2.1% on an annualised basis in the fourth quarter of 2019, keeping pace with the previous quarter. Consumption growth slowed by more than expected and business fixed investment declined for the third consecutive quarter. The halt in the production of the Boeing 737 Max is expected to weigh on manufacturing activity in the first quarter of 2020. Looking further ahead, growth was expected to decrease amidst a maturing business cycle and the fading impact of the 2018 tax reform. Annual headline consumer price inflation declined slightly to 2.3% in February from 2.5% in the previous month. Excluding food and energy, annual inflation ticked up to 2.4% from a 2.3% level recorded over the previous four months. Inflation is expected to increase gradually above the Fed's 2% target by the end of the forecast horizon. On March 3, following an emergency meeting, the Federal Reserve cut its policy interest rate by 50 basis points to 1-1.25%, citing the risk the outbreak is posing to economic activity. Further measures, including liquidity provisions as well as additional fiscal spending, were enacted in order to tackle the impact of the outbreak on the economy.

In China, activity is expected to weaken considerably in the first quarter and recover thereafter. Over the medium term, real GDP is expected to remain on a gradual slowing trajectory. Annual GDP growth for 2019 decelerated to 6.1% from 6.6% in 2018, driven by less supportive investment and net trade. The impact of the COVID-19 outbreak will dominate in the near term, while lower tariffs in the context of the trade agreement with the United States are expected to support trade. Over the medium term, progress with the implementation of structural reforms is expected to facilitate an orderly slowdown and some rebalancing of the Chinese economy. Since the cut-off date for projections, incoming data in China suggest that the slowdown in the first quarter could be stronger than expected. In addition, a more gradual return of production to normality indicates that the recovery of activity could take somewhat longer than envisaged in the March 2020 ECB staff macroeconomic projections. A number of economic policy measures have been enacted in China since the outbreak started, including, among others, more accommodative monetary policy and additional fiscal spending.

In Japan, economic activity contracted significantly in the fourth quarter, reflecting a confluence of negative shocks, including a fall in domestic demand as a result of the consumption tax hike, production disruptions caused by powerful typhoons in October and weak external demand. The negative spillovers from the coronavirus outbreak in China, which hit the Japanese economy through a significant decline in inbound tourism spending during the Lunar New Year holidays, coupled with early signs of potential supply chain disruptions, are expected to weigh on activity in the first quarter. Furthermore, the Japanese authorities enacted a number of measures to contain the COVID-19 outbreak in the country, which jointly with more cautious behaviour by consumers, is expected to weigh on economic activity. In reaction to this, the Japanese government has responded with two emergency fiscal packages, including measures to support SMEs. The Bank of Japan stated that it is closely monitoring developments and stands ready to provide liquidity and ensure stability in financial markets. Fiscal stimulus measures announced by the Japanese authorities in late 2019 are expected to support growth in 2020-2021.

In the United Kingdom, activity was expected to recover in the first quarter. However, the economic impact of COVID-19 will likely result in a renewed slowdown in the second quarter. Real GDP growth was flat in the fourth quarter of 2019, reflecting a continued slowing in the underlying momentum seen earlier in the year and a broader deceleration seen since the 2016 referendum. Domestic demand had slowed markedly in the second half of 2019 against a backdrop of high Brexit-related uncertainty and a general election campaign in the last quarter of the year. While sentiment had improved markedly following the decisive results of the general election and the subsequent conclusion of an orderly withdrawal from the European Union at the end of January, a strong turnaround in activity in 2020 had not been anticipated, even before the outbreak, given the remaining uncertainties surrounding the future of UK-EU trade negotiations. In response to the COVID-19 outbreak, the Bank of England cut its policy rate by 50 basis points to 0.25% and introduced a targeted lending programme aimed at small and medium-sized enterprises, while the draft budget proposed by the government includes a number of fiscal measures to tackle the economic impact of the outbreak.

In central and eastern European countries, economic activity was expected to moderate from above-potential growth rates. This moderation reflected mainly slower investment growth against the backdrop of a more advanced phase of the EU funds cycle, while consumer spending was expected to be underpinned by solid labour markets.

Economic activity in large commodity exporting countries was expected to strengthen somewhat this year. In Russia, economic activity picked up in the course of 2019 and had been expected to accelerate further on the back of additional social spending decided upon by the new government. However, downside risks loom large as the global spread of the COVID-19 virus, the recent collapse of the OPEC+ agreement, and a sharp decline in oil prices render the outlook unusually uncertain. The medium-term outlook is primarily shaped by uncertainty regarding additional international sanctions as well as the policy priorities of the recently appointed government. GDP had been revised upwards in the near term, largely on the back of

higher public spending. In Brazil, economic sentiment started to improve in the fourth quarter. However, growth remains subdued owing to tight fiscal constraints (including budget freezes) and an uncertain external environment, a situation that recently worsened with the increasing spread of the COVID-19 virus. The degree to which additional necessary fiscal reforms are implemented will significantly influence growth prospects in the medium term. At the same time, fiscal imbalances remain a principal source of risk should they fail to be addressed. Therefore adhering to fiscal rules such as the spending cap ceiling makes large fiscal stimulus less likely.

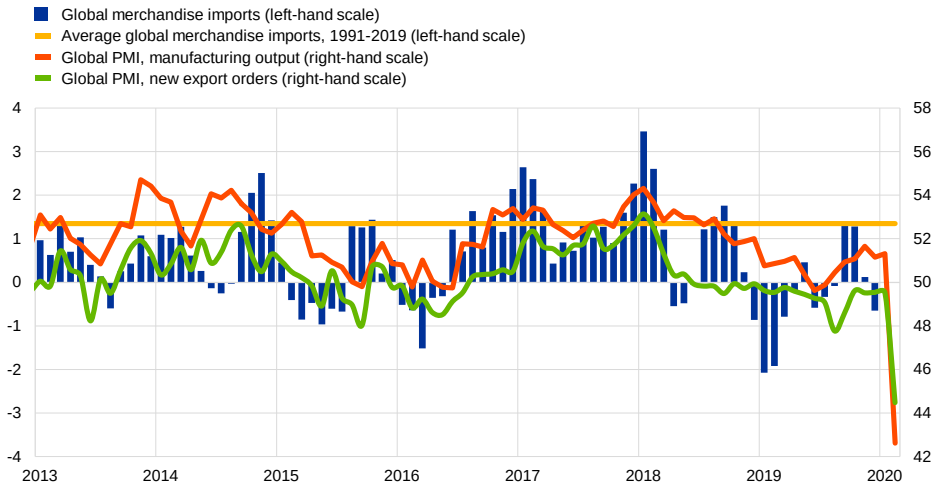
In Turkey, activity levels continue to recover strongly from the recent crisis-related recession. Real GDP growth in annual terms moved into positive territory in the third quarter and strengthened further in the fourth quarter of 2019. Expansionary fiscal policy and rapid credit expansion drove the robust growth in household consumption and the bottoming out of private sector investment. They are both expected to continue fostering growth this year. Notwithstanding this, growth rates remain relatively low in historical terms given the economy's weakened potential.

Signs of a stabilisation in global trade had become visible in late 2019. Global imports turned out to be stronger owing largely to buoyant import growth in Turkey, China and other EMEs. In contrast, weaker-than-expected import data for advanced economies in 2019Q4 reflected a number of idiosyncratic shocks expected to dissipate over the near term. In Japan, these factors relate to a contraction in domestic demand following the consumption tax hike and the impact of a powerful typhoon. In the United Kingdom and the United States, they reflect the unwinding of previously accumulated inventories. The diverging development in trade between advanced economies and EMEs was also evident from merchandise trade data. Overall, global merchandise imports contracted by 0.7% in the fourth quarter of 2019 (see Chart 2). However, the COVID-19 outbreak is expected to delay the stabilisation of global trade, weighing on the global manufacturing sector in particular, as evidenced by the latest survey data. As the virus continues to spread globally, its impact on trade will be more significant than envisaged in the March 2020 ECB staff macroeconomic projections.

Chart 2

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

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



Sources: Markit, CPB Netherlands Bureau for Economic Policy Analysis and ECB calculations.
Note: The latest observations are for February 2020 for the PMIs and December 2019 for global merchandise imports. The indices and data refer to the global aggregate excluding the euro area.

The recent signing of the so-called Phase 1 trade deal between the United States and China offers a respite from trade tensions. Under this deal, both countries reduced their bilateral trade tariffs, and China made a commitment to purchase an additional USD 200 billion in goods and services from the United States over the next two years. While this partial de-escalation of their trade conflict supports the recovery in global manufacturing activity and trade, uncertainty about the future course of global trade policies remains high.

The global trade outlook remains weak by historical standards, as the trade elasticity of income is expected to remain below its "new normal" of unity.[2] This reflects a confluence of factors, including, for example, the higher tariff rates enacted to date and elevated policy uncertainty. According to the March 2020 ECB staff macroeconomic projections, global import growth (excluding the euro area) is expected to pick up gradually from 0.3% last year to 1.4% in 2020, before rising to 2.6% and 2.7% in 2021 and 2022 respectively. Euro area foreign demand is projected to increase by 1.6% this year, before accelerating to 2.5% and 2.6% in 2021 and 2022 respectively. While euro area foreign demand has been revised upwards for 2020, compared to the December 2019 Eurosystem staff macroeconomic projections, this revision relates mainly to upside surprises in the second half of 2019 as well as higher bilateral imports between the United States and China resulting from the lower tariffs implemented under the Phase1 agreement. As the latter mostly supports bilateral trade between the two countries, it shall not be treated as a signal of higher foreign demand for goods and services produced in the euro area. Taking these factors into consideration, euro area foreign demand in the March projections is expected to be broadly in line with the December projections for this year and next. Developments since the cut-off date for projections suggest that the unfolding global COVID-19

[2] See, for example, IRC Trade Task Force, "Understanding the weakness in global trade – What is the new normal?", *Occasional Paper Series*, No 178, ECB, September 2016.

epidemic is weighing on global trade and accordingly on euro area foreign demand. Taking them into account would imply that global imports and euro area foreign demand will be weaker than envisaged in the March 2020 ECB staff macroeconomic projections.

The risks to the global activity outlook have changed, but their balance remains tilted to the downside. The new and currently most acute downside risk relates to the potentially broader and longer impact of the still unfolding COVID-19 outbreak. Developments in the global economy since the cut-off date for the projections suggest that this downside risk has already partly materialised.[3] Downside risks stemming from trade tensions have abated somewhat following the Phase 1 deal, but uncertainty about the future path of global trade policies remains elevated. The risk of a no-deal Brexit has been pushed back to the end of the year and will depend on the outcome of the EU-UK negotiations over their future relationship. Moreover, a sharper slowdown in China could be increasingly difficult to counteract with policy stimulus and could prove a challenge to the ongoing rebalancing process. Repricing of risk by the financial markets might weigh negatively on global activity, especially on EMEs.

Global price developments

Oil prices have significantly decreased as worries about global demand intensified against the background of the unfolding epidemic. Discord among members of the OPEC+ alliance regarding production cuts further accentuated this decline. Initially, oil prices were hit hardest by news of the outbreak in China in late January. They recovered somewhat for a short period of time, but started to decline as the virus began to spread across the globe. In early March, the OPEC+ alliance between OPEC and some major non-OPEC countries broke down as Russia refused to implement cuts to oil production. Saudi Arabia responded to this by announcing an increase in production and by offering oil at a discount, in order to gain market shares. This resulted in one of the biggest one-day drops in oil prices recorded to date.

In the March 2020 ECB staff macroeconomic projections, oil prices were expected to remain relatively stable over the projection horizon. Declining spot prices had moved the short end of the oil futures curve down further compared to the longer end, resulting in a flattening of the curve over the projection horizon. Compared with the December 2019 Eurosystem staff macroeconomic projections, the oil price assumptions were 5.5%, 3.2% and 2.5% lower for 2020, 2021 and 2022 respectively. Since the cut-off date for the March projections, the price of oil has declined significantly, with Brent crude standing at USD 34.5 per barrel on 11 March.

Global inflation remains subdued, reflecting the growth dynamics. In countries belonging to the Organisation for Economic Co-operation and Development (OECD), annual consumer price inflation recorded an uptick to 2.1% in December 2019 from 1.8% in the previous month (see Chart 3). Annual energy price inflation bounced back in December after being in negative territory for four consecutive months, while food

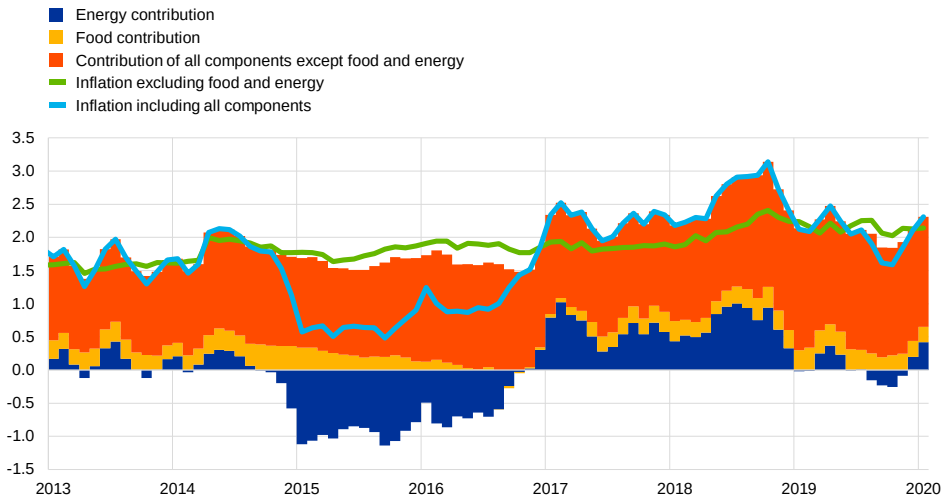
[3] For further details on risk scenarios see Box 3 in the ECB staff macroeconomic projections for the euro area, March 2020.

prices remained relatively steady. Meanwhile, annual core CPI inflation (excluding food and energy) was unchanged from the previous month at 2.1%.

Chart 3

OECD consumer price inflation

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



Sources: OECD and ECB calculations.
Note: The latest observations are for January 2020.

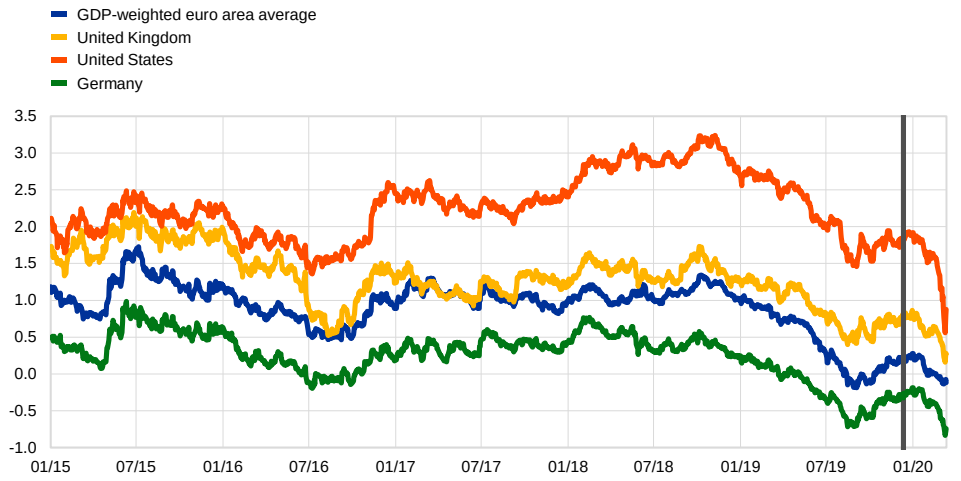
2 Financial developments

Global risk sentiment deteriorated sharply and market volatility surged as the coronavirus (COVID-19) spread around the world towards the end of the review period (12 December 2019 to 11 March 2020). Euro area long-term risk-free rates declined markedly to levels significantly lower than at the start of the period, while spreads between sovereign bonds in the euro area increased tangibly towards the end of the review period. The forward curve of the euro overnight index average (EONIA) shifted sharply downwards; its inversion at shorter to medium-term maturities signals market pricing of further monetary policy accommodation. In line with the sharp rise in global risk aversion, euro area equity prices decreased strongly, while sovereign and corporate bond spreads widened. In volatile foreign exchange markets, the euro appreciated substantially against the currencies of 38 of the euro area's most important trading partners.

Long-term sovereign yields decreased significantly over the euro area as a whole and across the globe (see Chart 4) amid high volatility. Movements in average euro area sovereign yields can be divided into three distinct phases. Between 12 December 2019 and mid-January 2020, yields increased slightly amid improved global risk sentiment and some perceived bottoming-out of macroeconomic indicators. During the second phase, up until 21 February 2020, coronavirus-related news and disappointing macroeconomic releases led to a downturn in risk sentiment and sovereign yields started to decrease on average. In the most recent phase, sovereign yields suffered a further significant decline as the coronavirus started spreading around the world and concerns about its economic and social repercussions began to rattle global financial markets. Over the review period as a whole, the GDP-weighted euro area ten-year sovereign bond yield decreased by 33 basis points to return to negative territory at -0.12%. The ten-year sovereign bond yields in the United States and the United Kingdom also decreased, to 0.88% and 0.27% (down 102 and 54 basis points) respectively, mainly reflecting global concerns about the coronavirus and the expected monetary policy reaction coupled with flight-to-safety movements into risk-free assets.

Chart 4

Ten-year sovereign bond yields

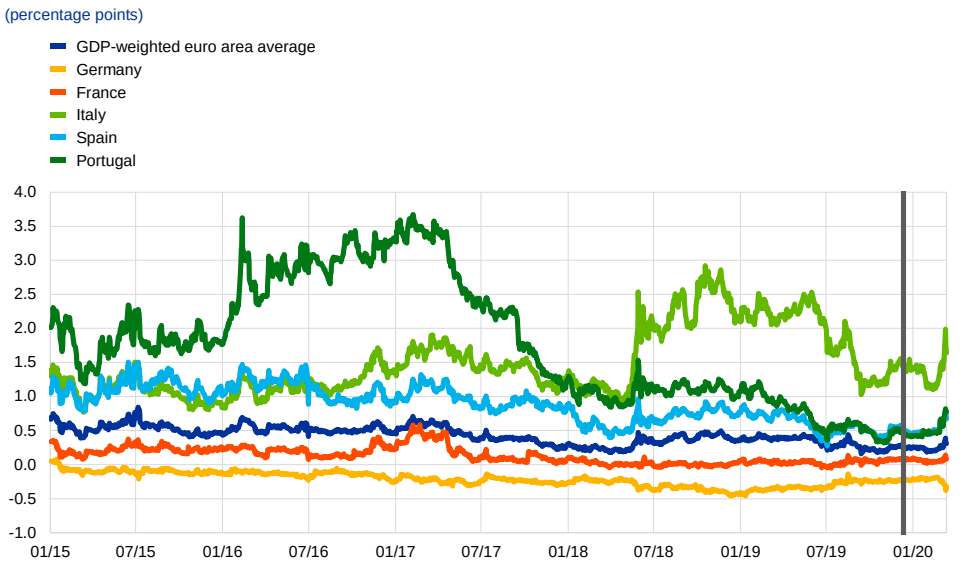


Sources: Thomson Reuters and ECB calculations.
Notes: Daily data. The vertical grey line denotes the start of the review period on 12 December 2019. The latest observations are for 11 March 2020.

In line with the changing risk sentiment, the spreads of euro area sovereign bonds relative to overnight index swap (OIS) rates increased for a number of countries, with Germany forming a notable exception (see Chart 5). Specifically, the ten-year Greek, Italian, Portuguese and Spanish sovereign spreads increased by 45, 25, 15 and 32 basis points to reach 1.87, 1.64, 0.77 and 0.67 percentage points respectively. By contrast, the in Germany ten-year spread decreased by 10 basis points to -0.32 percentage points, while in France it remained broadly stable at 0.08 percentage points. The GDP-weighted euro area ten-year sovereign bond spread increased by 5 basis points to 0.31 percentage points.

Chart 5

Ten-year euro area sovereign bond spreads vis-à-vis the OIS rate



Sources: Thomson Reuters and ECB calculations.
Notes: The spread is calculated by subtracting the ten-year OIS rate from the ten-year sovereign bond yield. The vertical grey line denotes the start of the review period on 12 December 2019. The latest observations are for 11 March 2020.

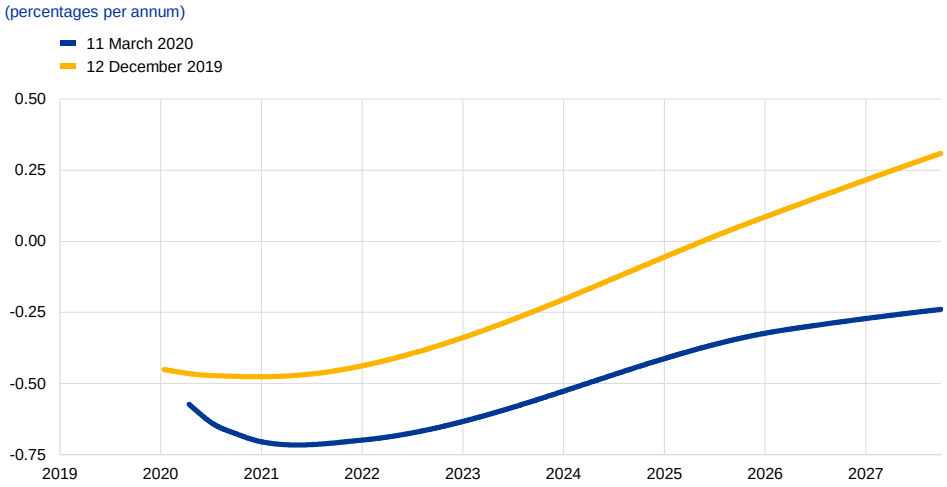
The EONIA and the new benchmark euro short-term rate (€STR) averaged -45 and -54 basis points respectively over the review period.[4] Excess liquidity decreased a slight €22 billion in the period under review to around €1,770 billion. This change mainly reflects voluntary repayments in the second series of targeted longer-term refinancing operations (TLTRO II) and, to a lesser extent, an increase in liquidity-absorbing autonomous factors, which offset the increased liquidity stemming from the restart of Eurosystem net asset purchases on 1 November 2019.

The EONIA forward curve shifted downwards and had inverted at shorter to medium-term maturities by the end of the review period (see Chart 6). While the curve was initially practically flat at shorter to medium-term maturities, at the end of the review period it reached -0.60% in mid-May 2020 and a low of -0.72% in April 2021. Despite these declines, the EONIA forward curve remains above the levels observed during the summer of 2019. Overall, market participants continue to expect a prolonged period of low and negative interest rates.

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

Chart 6

EONIA forward rates

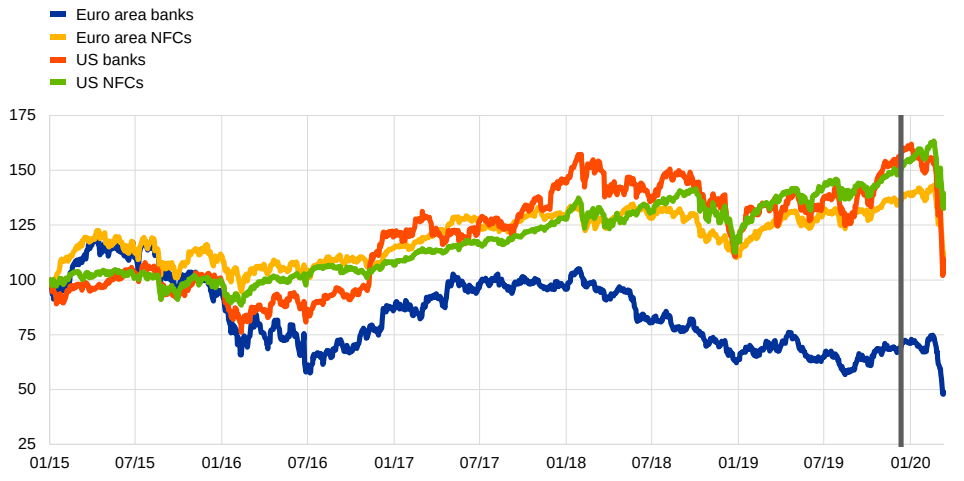


Sources: Thomson Reuters and ECB calculations.

Euro area equity prices started declining strongly at the end of February against the background of increased risk premia (see Chart 7). Equity prices in the euro area and globally increased further during the first part of the review period and reached new record highs in some market segments. Equity markets suffered an initial yet short-lived decline at the end of January, when concerns about the coronavirus started to intensify but were confined mainly to China. Finally, stock prices dropped sharply across the board as the coronavirus spread outside China and risk aversion and uncertainty rose in parallel during late February. Specifically, equity prices of non-financial corporations (NFCs) in the euro area decreased by 19% between 21 February and 11 March 2020, while those of banks dropped by 30%. In the United States, NFC and bank equity prices fell back by 12% and 36% respectively. Implied stock market volatility surged in the euro area and globally.

Chart 7

Euro area and US equity price indices

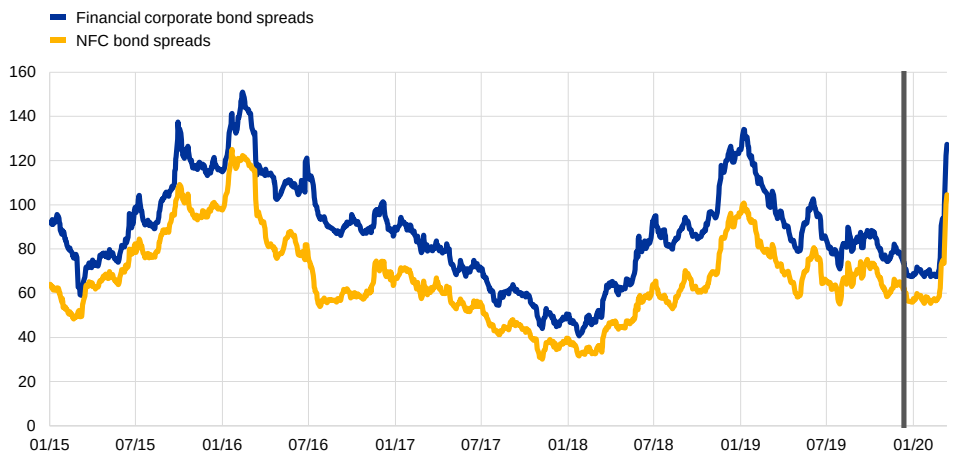


Sources: Thomson Reuters and ECB calculations.
Notes: The vertical grey line denotes the start of the review period on 12 December 2019. The latest observations are for 11 March 2020.

After remaining relatively stable for some time, financial and non-financial corporate bond spreads surged in the euro area in late February as the coronavirus spread outside China (see Chart 8). As of 21 February 2020, spreads on investment-grade NFC bonds and financial sector bonds relative to the risk-free rate increased by 42 and 53 basis points respectively to stand at 104 and 127 basis points. This widening mirrored the deterioration in risk sentiment as also seen in the equity market. At the same time, ratings and measures of expected default frequencies remained broadly unchanged.

Chart 8

Euro area corporate bond spreads

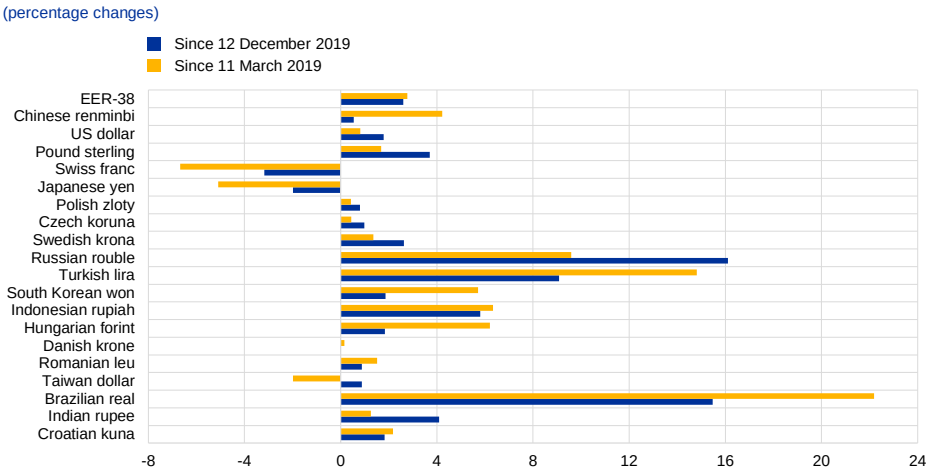


Sources: Markit iBoxx indices and ECB calculations.
Notes: Spreads are calculated as asset swap spreads to the risk-free rate. The indices comprise bonds of different maturities (but at least one year remaining) with an investment grade rating. The vertical grey line denotes the start of the review period on 12 December 2019. The latest observations are for 11 March 2020.

In foreign exchange markets, the euro appreciated substantially in trade-weighted terms (see Chart 9) amid increased volatility. 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 2.6% over the review period. Regarding bilateral exchange rate developments, the euro appreciated strongly (by 1.8%) against the US dollar, albeit in an environment of heightened volatility. The US dollar had strengthened during the first half of February, partly on account of greater uncertainty around the global economic outlook but started to weaken in late February on expectations of monetary policy easing in the United States, a trend that continued after the Fed rate cut in early March and as coronavirus-related news continued to worsen. At the same time, the euro appreciated very strongly against the pound sterling (by 3.7%) and also strengthened vis-à-vis most other currencies, including those of non-euro area EU Member States and major emerging economies. The euro depreciated significantly against the Swiss franc (by 3.2%) and the Japanese yen (by 2.0%) in line with the decline in risk appetite.

Chart 9

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. A positive (negative) change corresponds to an appreciation (depreciation) of the euro. All changes have been calculated using the foreign exchange rates prevailing on 11 March 2020.

3 Economic activity

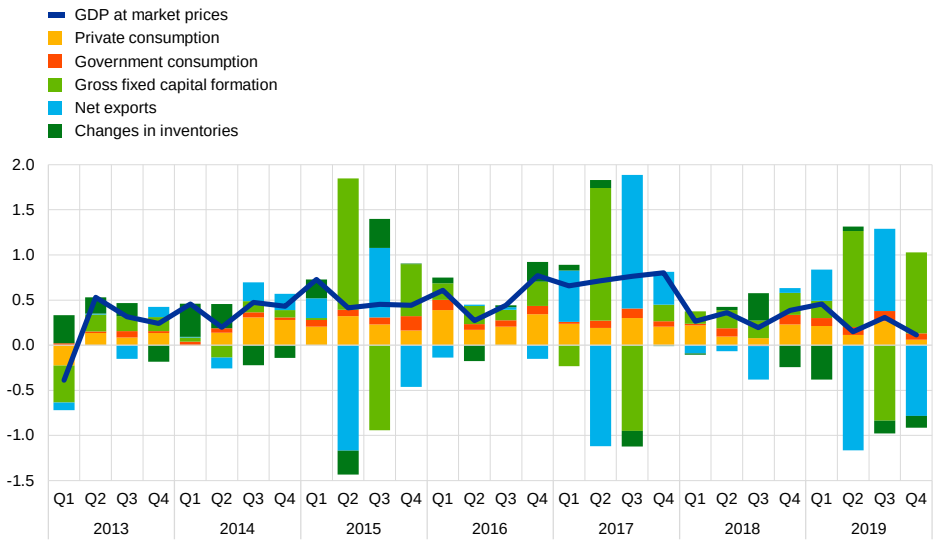
Euro area real GDP growth remained subdued at 0.1%, quarter on quarter, in the fourth quarter of 2019, following growth of 0.3% in the previous quarter, driven by ongoing weakness in the manufacturing sector and slowing investment growth. Incoming economic data and survey information point to euro area growth dynamics at low levels. However, they do not yet fully reflect developments related to the coronavirus (COVID-19), which started to spread across continental Europe at the end of February, adversely affecting economic activity. Looking beyond the disruptions stemming from the spread of the coronavirus, euro area growth is expected to regain traction over the medium term, supported by favourable financing conditions, the euro area fiscal stance and the expected resumption in global activity. The March 2020 ECB staff macroeconomic projections for the euro area expect annual real GDP to increase by 0.8% in 2020, 1.3% in 2021 and 1.4% in 2022. Compared with the December 2019 Eurosystem staff macroeconomic projections, the outlook for real GDP growth has been revised down by 0.3 percentage points for 2020 and by 0.1 percentage points for 2021, mainly on account of the coronavirus outbreak, although the recent rapid spread of the virus to the euro area is only partly reflected. The risks surrounding the euro area growth outlook are therefore clearly on the downside. The spread of the coronavirus adds a new and substantial source of downside risk to the growth outlook, in addition to risks related to geopolitical factors, rising protectionism and vulnerabilities in emerging markets.

Growth in the euro area moderated in the fourth quarter of 2019, reflecting ongoing weakness in the manufacturing sector. Real GDP increased by 0.1%, quarter on quarter, in the fourth quarter of 2019, compared with 0.3% in the previous quarter (see Chart 10). Subdued growth in the fourth quarter was driven by a sharp contraction in the manufacturing sector, while the services and construction sectors continued to exhibit more resilient dynamics. Domestic demand made a positive contribution to growth of 1.0 percentage point, while net exports and changes in inventories contributed negatively by 0.8 and 0.1 percentage points, respectively. Overall, output growth in the fourth quarter led to a yearly rise in GDP of 1.2% in 2019, down from 1.9% in 2018.

Chart 10

Euro area real GDP and its components

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



Sources: Eurostat and ECB calculations.
Notes: The latest observations are for the fourth quarter of 2019.

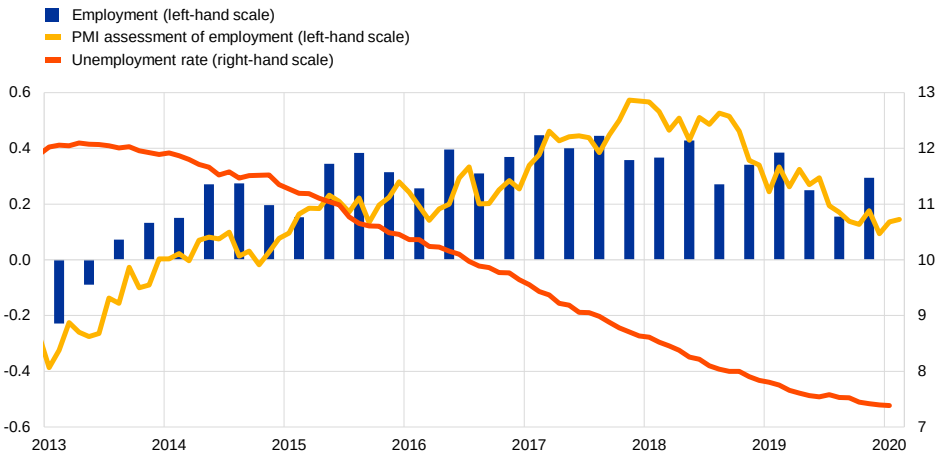
Employment continued to increase in the fourth quarter of 2019, rising by 0.3% quarter on quarter (see Chart 11). Most euro area countries saw an increase in employment, but this was more concentrated in the construction and services sectors. The level of employment currently stands at almost 4.3% above the pre-crisis peak recorded in the first quarter of 2008. Taking into account the latest increase, there has been cumulative growth in employment in the euro area, with 12.0 million more people in employment than at the time of the trough in the second quarter of 2013. The positive development in employment growth in the fourth quarter of 2019 contrasts with the background of weaker real activity, with labour productivity per person employed decreasing by 0.2%. The higher than expected employment growth in the euro area could also be consistent with the resilience of the more labour intensive domestic demand, compared with the weaker growth in the less labour intensive external trade sector.

Despite stable readings from recent short-term labour market indicators so far in the first quarter of 2020, short term employment dynamics remain dependent on the impact of the coronavirus. The euro area unemployment rate stood at 7.4% in January 2020, unchanged from the fourth quarter of 2019, and remains at its lowest level since July 2008. Survey indicators point to further increases in employment in the first quarter of 2020, with the Purchasing Managers' Index (PMI) employment composite indicator remaining broadly stable at 51.4 in February 2020, following levels of 51.4 in January 2020 and 51.3 in the fourth quarter of 2019.

Chart 11

Euro area employment, PMI assessment of employment and unemployment

(quarter-on-quarter percentage changes; diffusion index; percentages of the 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 2019 for employment, February 2020 for the PMI and January 2020 for the unemployment rate.

Private consumption continued to grow in the fourth quarter of 2019, albeit at a slower pace than in the previous quarter. Private consumption increased by 0.1%, quarter on quarter, in the fourth quarter of 2019, following somewhat stronger growth in the third quarter. The recent weakness in household expenditure partly reflected calendar effects in December. Employment growth strengthened in the fourth quarter of 2019 in an environment of robust wage increases. This implies steady growth in households' real disposable income and supports consumer confidence and spending. In addition, while financing conditions remain very favourable, households' net worth improved in the third quarter of 2019.

Available short-term indicators suggest some resilience in private consumption in early 2020, but this is subject to the spread of the coronavirus in Europe. Recent data on retail sales indicate moderate but steady growth in consumer spending, with some volatility being recorded around the turn of the year. The volume of retail sales increased by 0.6% in January 2020, following a drop of 1.1% in December 2019. In addition, consumer confidence increased for a second consecutive month in February 2020. The latest improvement reflects households' more benign views regarding their past and future financial situation. Consumer confidence remains above its historical average and is consistent with ongoing steady growth in private consumption. However, recent measures to contain the spread of the coronavirus are expected to have a significant impact on consumption going forward.

The recovery in housing markets is expected to continue at a slower pace than in 2019 and to be negatively affected by the coronavirus outbreak. Housing investment increased by 0.4%, quarter on quarter, in the fourth quarter of 2019, reflecting a moderation in the growth momentum in euro area housing markets. Although housing investment growth decreased for the third consecutive year in 2019, recent short-term indicators and survey results point to positive but slowing momentum. Construction production in the buildings segment dropped by 1.0%,

quarter on quarter, in the fourth quarter of 2019, marking its third consecutive quarterly decline. The European Commission's construction confidence indicators for the past few months point to positive, albeit weakening, momentum in the fourth quarter of 2019 and early 2020. The PMI for housing activity averaged 50.6 in the fourth quarter of 2019 and 52.6 in January and February 2020.

Business investment growth in the euro area was particularly volatile in 2019, masking a slowdown in machinery and equipment investment and large swings in intangible investment. Non-construction investment grew by 8.0%, quarter on quarter, in the fourth quarter of 2019, on account of a 20% quarterly rise in investment in intellectual property products, mainly related to Ireland. Meanwhile, quarterly machinery and equipment investment growth slowed in 2019 and contracted in the fourth quarter, an outcome which was mirrored in the particularly weak industrial production of capital goods in that quarter. The loss of momentum partly reflects remaining elevated economic uncertainty and weaker demand conditions. In January and February 2020 the assessment of export order books and production expectations in the capital goods sector improved somewhat, according to information collected before the outbreak of the coronavirus in Europe. With regard to confidence indices for the capital goods sector, the PMI for January and the Economic Sentiment Indicator (ESI) for February increased from their levels in the fourth quarter of 2019, but remained below historical averages. Forward-looking indicators such as manufacturing uncertainty edged down in January, and the decline in the earnings expectations of listed companies came to a halt in February. Recovering profits, favourable financing conditions and ample corporate liquidity buffers should also support a gradual recovery in investment growth.

While extra-euro area goods exports recovered in the fourth quarter of 2019, driven by improvements vis-à-vis emerging market economies, this recovery is likely to be reversed in the first quarter of 2020 owing to the impact of the coronavirus outbreak. Nominal extra-euro area exports of goods increased by 1.3%, quarter on quarter, in the fourth quarter of 2019. In particular, exports to Turkey, Brazil, China and the rest of Asia recovered at the end of 2019. However, exports of goods to the United States and the United Kingdom weakened in the same period owing to lower exports of pharmaceuticals and the winding down of inventories previously built up in relation to Brexit, respectively. Intra-euro area trade remained anaemic, reflecting weakness in euro area industrial production and investment. Looking ahead, available leading indicators point to a decline in exports as a result of the coronavirus. The PMI on new euro area export orders for February 2020 dropped sharply, and shipping indicators (e.g. the Baltic Dry Index) reversed significantly in their latest releases. These indicators do not yet incorporate the effects of the coronavirus outbreak in Italy and other euro area countries. The impact of the coronavirus on euro area trade is expected to materialise through disruptions to extra- and intra-euro area supply chains, lower foreign demand, a deterioration in confidence and a sharp decline in services such as tourism and transport.

Incoming economic data and survey information point to some stabilisation in euro area growth, albeit at low levels, but do not fully reflect developments related to the coronavirus outbreak in continental Europe. The composite output

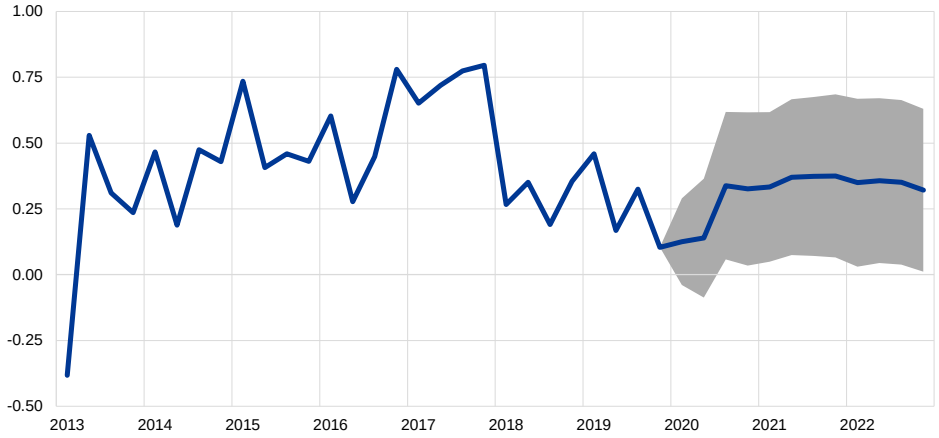
PMI increased in February 2020, with improvements in both manufacturing and services components, putting the average for the first two months of 2020 above that for the fourth quarter of 2019 (51.4 compared with 50.7). The European Commission's ESI increased in February, standing above its long-term average. So far in 2020 the average stands at 103.0, above the average of 100.6 in the fourth quarter of 2019. Although the ESI declined for the construction sector and softened slightly for the retail sector, this was broadly offset by improved sentiment in the manufacturing and services sectors and in households. Despite signs of stabilisation in survey data, supplier delivery times and business expectations in the surveys up to February already indicated constraints on euro area activity owing to the impact of the coronavirus in China. Developments related to the spread of the virus following the outbreak in Europe could lead to further supply chain disruptions and affect both consumption and investment, owing to very high levels of uncertainty and increased financial market volatility.

The March 2020 ECB staff macroeconomic projections for the euro area expect annual real GDP to increase by 0.8% in 2020, 1.3% in 2021 and 1.4% in 2022 (see Chart 12). Compared with the December 2019 Eurosystem staff macroeconomic projections, the outlook for real GDP growth has been revised down by 0.3 percentage points for 2020 and by 0.1 percentage points for 2021, mainly on account of the coronavirus outbreak, although the recent rapid spread of the virus to the euro area is only partly reflected. The risks surrounding the euro area growth outlook are therefore clearly on the downside. The spread of the coronavirus adds a new and substantial source of downside risk to the growth outlook, in addition to risks related to geopolitical factors, rising protectionism and vulnerabilities in emerging markets.

Chart 12

Euro area real GDP (including projections)

(quarter-on-quarter percentage changes)



Sources: Eurostat and the article entitled "March 2020 ECB staff macroeconomic projections for the euro area", published on the ECB's website on 12 March 2020.
Notes: The ranges shown around the central projections are based on the differences between actual outcomes and previous projections carried out over a number of years. The width of the range is twice the average absolute value of these differences. The method used to calculate the ranges, involving a correction for exceptional events, is documented in the "New procedure for constructing Eurosystem and ECB staff projection ranges", ECB, December 2009.

4 Prices and costs

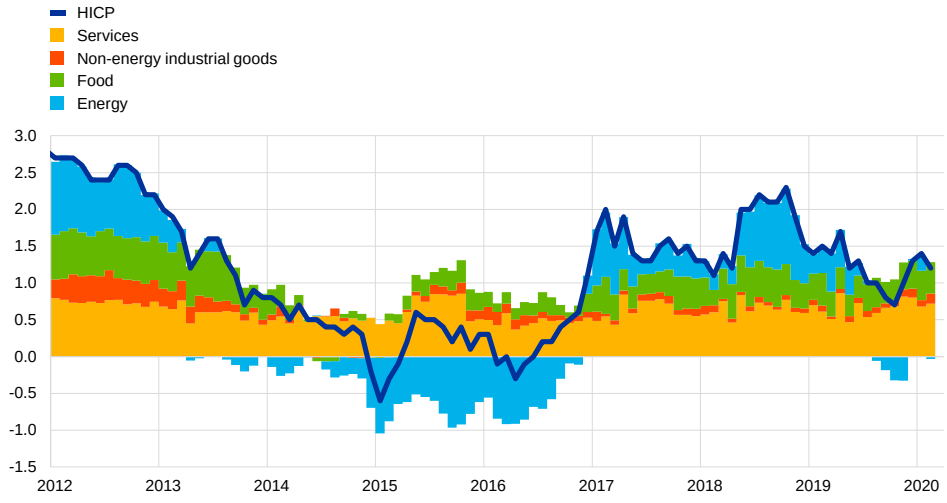
According to Eurostat's flash estimate, euro area annual HICP inflation decreased to 1.2% in February 2020, from 1.4% in January. On the basis of the recent sharp decline in current and futures prices for oil, headline inflation is likely to decline considerably over the coming months. This assessment is only partly reflected in the March 2020 ECB staff macroeconomic projections for the euro area, which foresee annual HICP inflation at 1.1% in 2020, 1.4% in 2021 and 1.6% in 2022, and are broadly unrevised compared to the December 2019 Eurosystem staff projections. Over the medium term inflation will be supported by the ECB's monetary policy measures. The implications of the coronavirus for inflation are surrounded by high uncertainty, given that downward pressures linked to weaker demand may be offset by upward pressures related to supply disruptions. The recent sharp decline in oil prices poses significant downside risks to the short-term inflation outlook.

According to Eurostat's flash estimate, HICP inflation decreased in February. The decrease from 1.4% in January to 1.2% in February reflected a decline in energy inflation, which more than offset increases in food, services and non-energy industrial goods inflation. While energy inflation remained the main driver of headline inflation dynamics, food inflation, at rates of more than 2%, has recently contributed substantially to the level of inflation.

Chart 13

Contributions of components of euro area headline HICP inflation

(annual percentage changes; percentage point contributions)

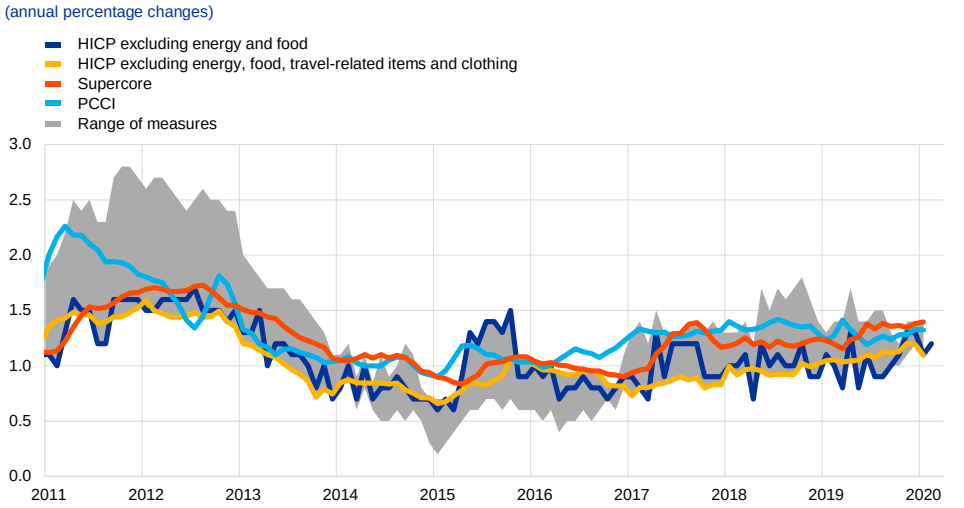


Sources: Eurostat and ECB calculations.
Notes: The latest observations are for February 2020 (flash estimates). Growth rates for 2015 are distorted upwards owing to a methodological change (see the box entitled "A new method for the package holiday price index in Germany and its impact on HICP inflation rates", *Economic Bulletin*, Issue 2, ECB, 2019).

Measures of underlying inflation remained muted in general. HICP inflation excluding food and energy increased to 1.2% in February, following some upward movement to 1.3% in November and December, and downward movement to 1.1% in January. Other measures of underlying inflation have been more stable over recent months (data available up to January only; see Chart 14). HICP inflation excluding energy, food, travel-related items and clothing, as well as the Persistent and Common

Component of Inflation (PCCI) indicator and the Supercore indicator,[5] continued the broad sideways movement that has been observed over the last year.

Chart 14
Measures of underlying inflation



Sources: Eurostat and ECB calculations.
Notes: The latest observations are for February 2020 for HICP excluding energy and food (flash estimate) and for January 2020 for all other measures. The range of measures of underlying inflation consists of the following: HICP excluding energy; HICP excluding energy and unprocessed food; HICP excluding energy and food; HICP excluding energy, food, travel-related items and clothing; the 10% trimmed mean of the HICP; the 30% trimmed mean of the HICP; and the weighted median of the HICP. Growth rates for HICP excluding energy and food 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).

Pipeline price pressures for HICP non-energy industrial goods remained broadly stable at the later stages of the supply chain. Producer price inflation for domestic sales of non-food consumer goods, which is an indicator of price pressures at the later stages of the supply chain, stood at 0.7% year on year in January, unchanged since October and above its historical average. The corresponding annual rate of import price inflation increased from -0.1% in December to 0.5% in January. Indicators of price pressures at earlier stages of the supply chain remained weak, but increased slightly, with annual producer price inflation for intermediate goods rising to -1.0% in January from -1.1% in December, and import price inflation for intermediate goods increasing from -1.2% in December to -0.4% in January.

Wage growth decreased. Annual growth in compensation per employee stood at 1.7% in the fourth quarter of 2019, down from 2.1% in the third quarter (see Chart 15). The average for 2019 stood at 2.0%, decreasing slightly from 2.2% in 2018. The figures for 2019 have been affected by a significant drop in social security contributions in France.[6] Annual growth in wages and salaries per employee, which excludes social security contributions, was 2.1% in the fourth quarter, down from 2.5% in the third quarter, and averaged 2.4% in 2019, compared with 2.3% on average in 2018. Annual growth in negotiated wages in the euro area stood at 2.0% in the fourth quarter of 2019, down from 2.6% in the third quarter. This decrease was due mainly to

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

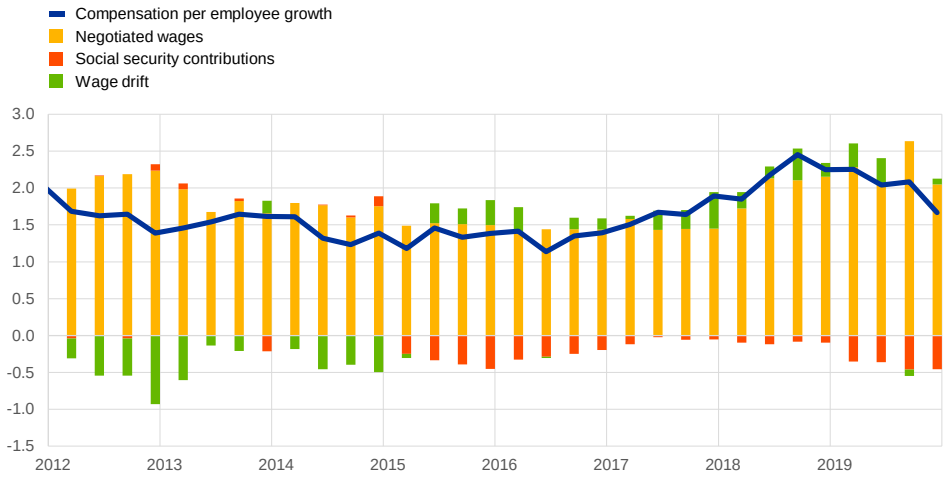
6 For more information, see Box 5 entitled "Recent developments in social security contributions and minimum wages in the euro area", *Economic Bulletin*, Issue 8, ECB, 2019.

one-off payments in the manufacturing sector in Germany in the third quarter. Looking across the different indicators and through temporary factors, wage growth decreased slightly in the course of 2019, although at rates around or slightly above historical averages.

Chart 15

Contributions of components of compensation per employee

(annual percentage changes; percentage point contributions)

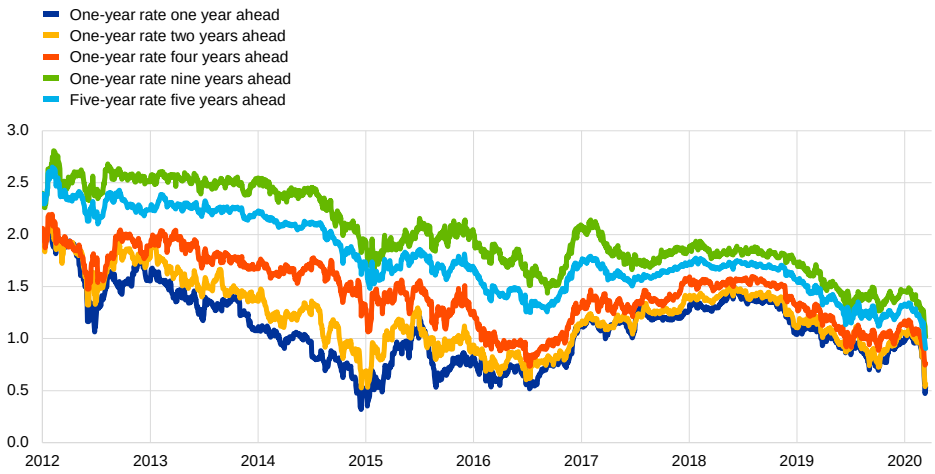


Sources: Eurostat and ECB calculations.
Note: The latest observations are for the fourth quarter of 2019.

Market-based indicators of longer-term inflation expectations declined to a new all-time low in early March, following a sharp correction in response to the global spread of the coronavirus. These recent declines in market-based indicators of inflation expectations followed an increase observed in the last quarter of 2019 and up to the January meeting of the Governing Council. Since mid-January, the 5y5y forward inflation-linked swap rate dropped by 42 basis points to stand at 0.91%. At the same time, the market-based (risk-neutral) deflation probability (based on average inflation over the next five years below zero) increased to 22%. The forward profile of market-based indicators of inflation expectations continues to point to a prolonged period of low inflation. According to the ECB Survey of Professional Forecasters for the first quarter of 2020 conducted during the second week of January 2020, as well as the latest releases from Consensus Economics and the Euro Zone Barometer, survey-based long-term inflation expectations in January were also at historically low levels.

Chart 16

Market-based indicators of inflation expectations



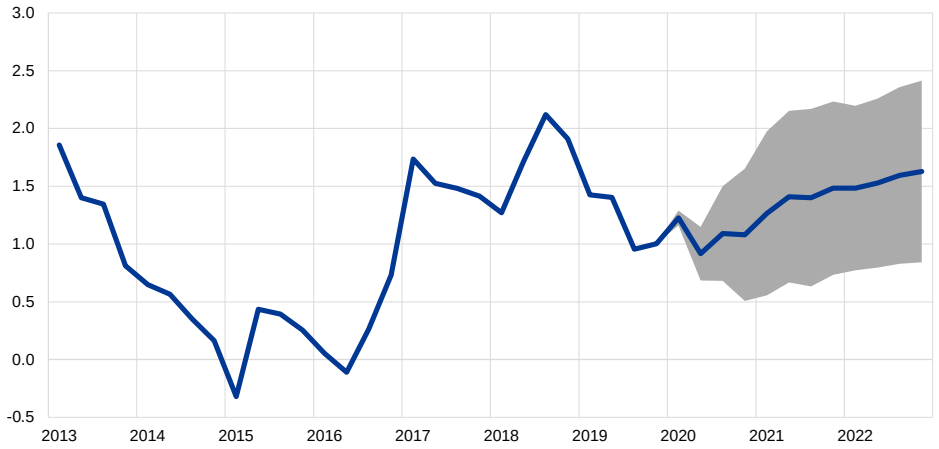
Sources: Thomson Reuters and ECB calculations.
Note: The latest observations are for 11 March 2020.

The March 2020 ECB staff macroeconomic projections foresee an increase in underlying inflation over the medium term. These projections expect headline HICP inflation to average 1.1% in 2020, 1.4% in 2021 and 1.6% in 2022, broadly unrevised from the December 2019 Eurosystem staff macroeconomic projections (see Chart 17). The weaker headline inflation rate in 2020 compared with 2019 reflects a notable drop in HICP energy prices given weak developments in oil prices (up to the cut-off date for the technical assumptions of 18 February), partly on account of the COVID-19 outbreak. HICP inflation excluding energy and food is expected to move sideways at 1.2% in the course of 2020 and strengthen gradually to 1.4% in 2021 and 1.5% in 2022. Beyond the impact on the oil price, the implications of the spread of COVID-19 for inflation are surrounded by considerable uncertainty. It is assumed in the projections that the downward pressures on prices related to weaker demand in 2020 will be largely offset by upward effects related to supply disruptions, although this assessment is subject to clear downside risks.

Chart 17

Euro area HICP inflation (including projections)

(annual percentage changes)



Sources: Eurostat and the article entitled "ECB staff macroeconomic projections for the euro area, March 2020", published on the ECB's website on 12 March 2020.
Notes: The latest observations are for the fourth quarter of 2019 (data) and the fourth quarter of 2022 (projection). The ranges shown around the central projections are based on the differences between actual outcomes and previous projections carried out over a number of years. The width of the ranges is twice the average absolute value of these differences. The method used for calculating the ranges, involving a correction for exceptional events, is documented in the "New procedure for constructing Eurosystem and ECB staff projection ranges", ECB, December 2009. The cut-off date for data included in the projections was 18 February 2020.

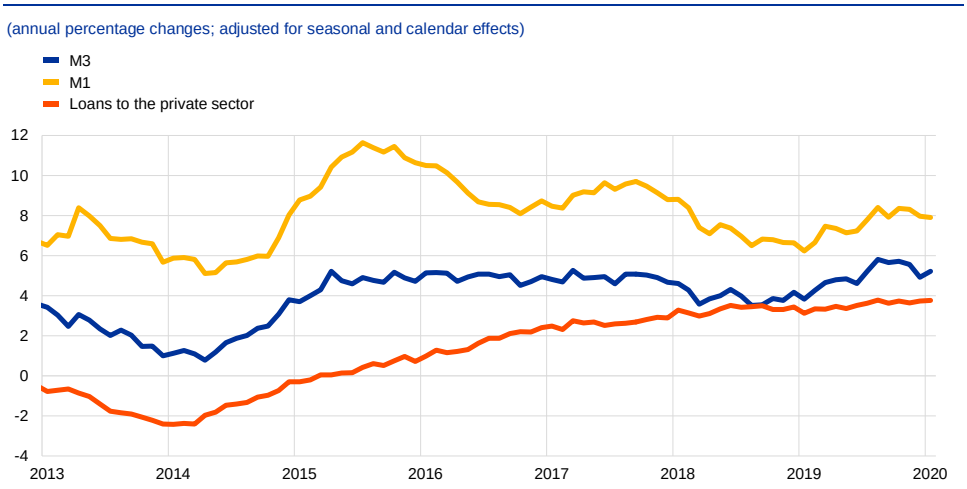
5 Money and credit

Monetary dynamics have moderated from comfortable levels since late summer 2019. Credit to the private sector has continued displaying divergent developments across loan categories. While lending to households has remained resilient, lending to firms has moderated. Favourable bank funding and lending conditions continued to support lending and thereby economic growth. Euro area firms' total net external financing has stabilised, supported by favourable debt financing costs. However, the recent increase in risk-off sentiment is likely to cause non-bank financing conditions for non-financial corporations (NFCs) to deteriorate.

Monetary dynamics have moderated since late summer 2019. The annual growth rate of M3 increased to 5.2% in January, from 4.9% in December (see Chart 18), mainly on account of a positive base effect related to marketable instruments, which concealed the continued moderation of shorter-term monetary dynamics. Broad money growth was supported by the very low opportunity cost of holding monetary instruments. By contrast, the slowdown in economic growth has acted as a drag on M3 growth. As in previous quarters, M3 growth continued to be mainly driven by the narrow aggregate M1, which comprises overnight deposits and currency in circulation. The annual growth rate of M1 reached 7.9% in January, after 8.0% in December.

Chart 18

M3, M1 and loans to the private sector



Source: ECB.
Notes: Loans are adjusted for loan sales, securitisation and notional cash pooling. The latest observation is for January 2020.

Overnight deposits remained the main contributor to money growth. The annual growth rate of overnight deposits remained broadly stable in January, at 8.4%, after 8.5% in December, while its contribution to annual M3 growth has moderated somewhat since the autumn of 2019; from a sectoral perspective, overnight deposits placed by firms and by households contributed to this moderation. The annual growth rate of currency in circulation continued to hover around 5% in January and does not point to an accelerated substitution of deposits with cash in the prevailing low-interest rate environment. The small increase in annual M3 growth in January was mainly owing to marketable instruments (i.e. M3 minus M2), which contributed positively to

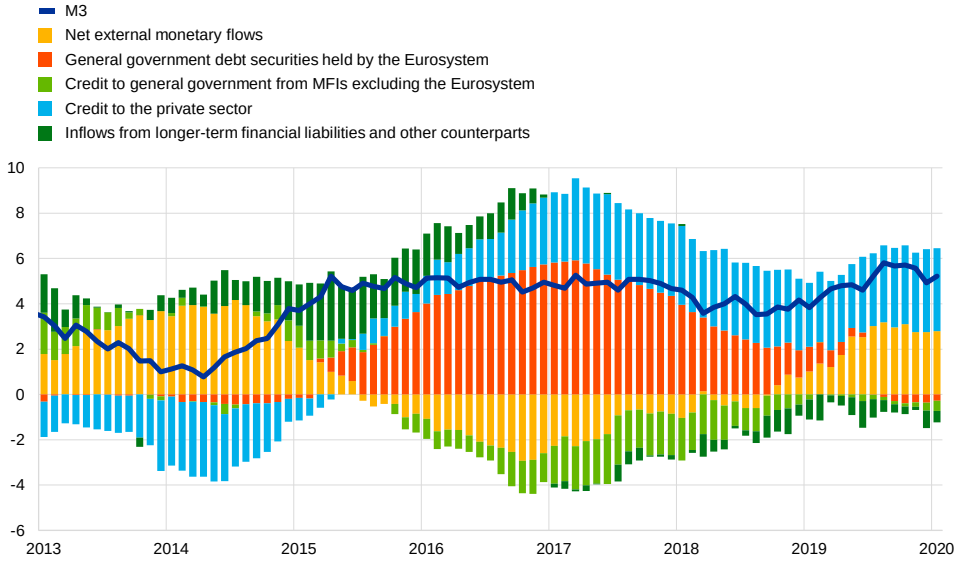
monthly M3 dynamics. This has reversed the dampening effect of marketable instruments on M3 in December, owing to the strongly negative net debt securities issuance that month, which may have reflected end-of-year effects.

Credit to the private sector remained the main source of broad money creation. Credit to the private sector continued to make a stable, sizeable contribution to broad money growth in January (see the blue portion of the bars in Chart 19). The annual contribution of credit to the private sector up to January 2020 largely reflected robust annual loan growth. External monetary flows were the second main source of money creation, which have provided a broadly stable contribution to M3 since November 2019, reflecting investors' preference for euro area assets (see the yellow portion of the bars in Chart 19). The resumption of the ECB's net asset purchases under the asset purchase programme (APP) in November has had only a limited direct impact on M3 in its first three months; this is potentially on account of banks and non-residents being among the main sellers of bonds to the Eurosystem. The resumption of net asset purchases has also not compensated the drag on M3 growth coming from the maturing of non-APP related debt securities (see the red portion of the bars in Chart 19). The drag from longer-term financial liabilities remained small (see the dark green portion of the bars in Chart 19).

Chart 19

M3 and its counterparts

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



Source: ECB.
Notes: Credit to the private sector includes monetary financial institution (MFI) loans to the private sector and MFI holdings of debt securities issued by the euro area private non-MFI sector. As such, it also covers purchases by the Eurosystem of non-MFI debt securities under the corporate sector purchase programme. The latest observation is for January 2020.

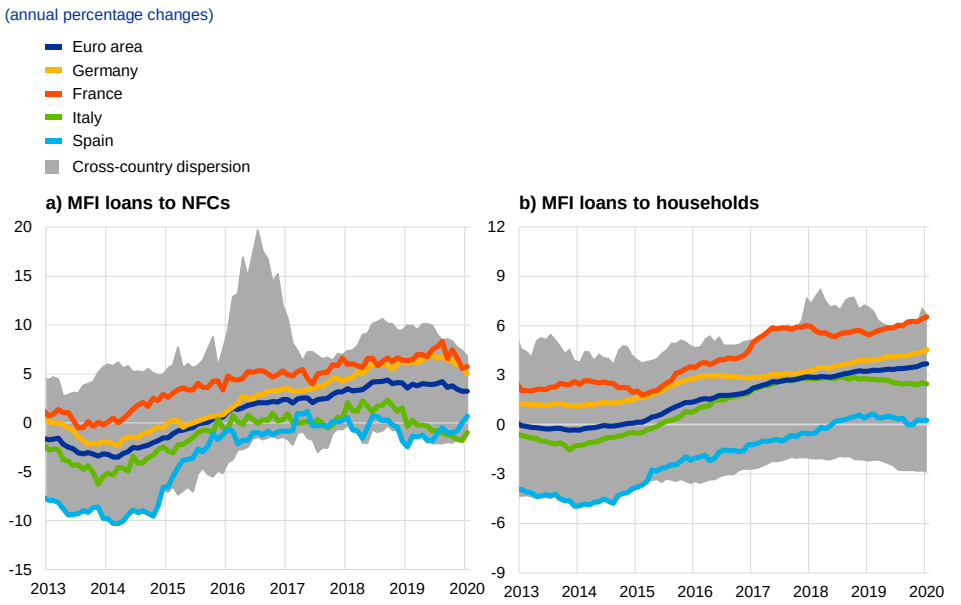
The annual growth rate of loans to the private sector remained overall broadly stable, amid divergent developments across sectors. The annual growth rate of MFI loans to the private sector (adjusted for loan sales, securitisation and notional cash pooling) stood at 3.8% in January, compared with 3.7% in December (see Chart 18). While the annual growth rate of loans to households remained on a slightly upward trajectory (3.7% in January, after 3.6% in December), the annual growth rate

of loans to firms has stabilised at 3.2%, thus confirming its moderation since September 2018. The considerable heterogeneity in loan growth across countries reflects, inter alia, cross-country differences in economic growth, variations in the availability of other funding sources, the level of indebtedness of households and firms, and heterogeneity in house price developments across countries (see Chart 20).

The moderation in the growth of loans to firms is in line with its lagging cyclical pattern with respect to real economic activity. The moderation in bank lending to firms continues to be concentrated in the manufacturing and trade sectors, which are particularly affected by the persisting slowdown in global activity. By contrast, there has been, so far, little sign of spill-overs into the services sector (including firms providing real estate-related services), which accounts for the largest share of the growth in lending to NFCs. Judging from the results of the euro area bank lending survey (BLS), the slowdown in loan growth to firms appears mainly demand-driven, e.g. resulting from lower financing needs for fixed investment. The leading indicator properties of the BLS also point to some further moderation in loan growth to firms in the first half of 2020. Credit standards, so far, have remained broadly unchanged, amid a mild negative reappraisal of the credit risk of firms, especially for small and medium-sized enterprises, which tend to be particularly sensitive to the economic cycle.

Chart 20

MFI loans in selected euro area countries



Source: ECB.
Notes: Loans are adjusted for loan sales and securitisation; in the case of NFCs, loans are also adjusted for notional cash pooling. The cross-country dispersion is calculated on the basis of minimum and maximum values using a fixed sample of 12 euro area countries. The latest observation is for January 2020.

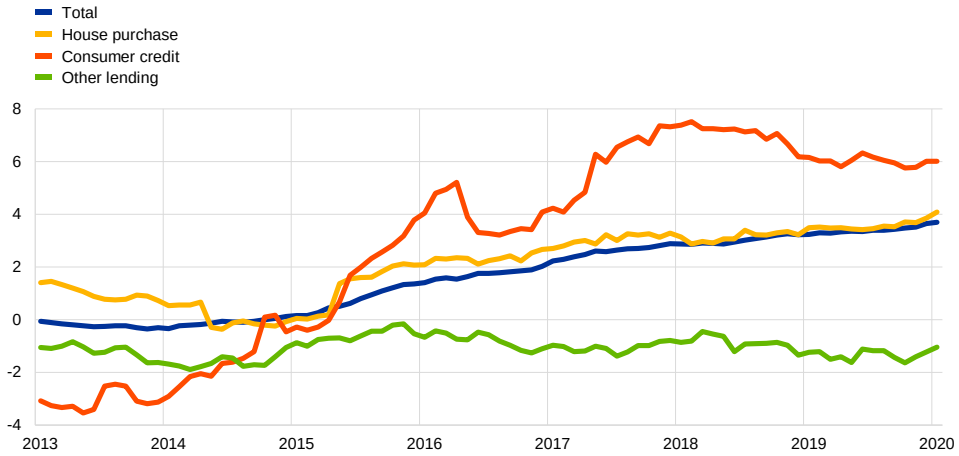
Lending to households for house purchase continued its gradual upward trend, while consumer credit growth stabilised. The annual growth rate of loans to households for house purchase increased to 4.1% in January, from 3.9% in

December, continuing its steady upward path since 2015 (see Chart 21). The annual growth rate of consumer credit remained robust at the euro area level, standing at 6% in January, unchanged from December. It has moderated somewhat from levels above 7% in early 2018. In contrast to the robust growth of mortgage loans and consumer credit, the annual growth of other lending to households remained subdued at -1.0% in January, after -1.2% in December. The weakness in this loan type can be largely attributed to lending to small firms (sole proprietors and unincorporated partnerships), which are recorded in the household sector. These entities may have been particularly affected by the slowdown in economic activity and may also rely on non-bank sources of financing, including internal funds, to cover their financing needs.

Chart 21

MFI loans to households by purpose

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



Source: ECB.
Notes: The series for total loans to households is adjusted for loan sales and securitisation. The latest observation is for January 2020.

Household gross indebtedness has stabilised at the euro area level in recent quarters close to its end-2007 level.[7] The stabilisation at the euro area level comes amid divergent debt developments of households across countries. At the same time, households' debt servicing costs reached a new historical low, which supports debt sustainability.

Banks' funding conditions remained favourable. The composite cost of debt financing for euro area banks, which has decreased since the start of 2019 in line with market rates, remained at very low levels in the fourth quarter of 2019 and January 2020 (see Chart 22). This development reflects a considerable decline in bank bond yields to historically low levels in the course of 2019, while they have rebounded, especially in reaction to the spread of the coronavirus (COVID-19) since late February. The deposit rates of euro area banks, which account for the bulk of bank funding and for which data are available until January 2020, remained at their historical low, thus contributing to favourable bank debt funding conditions. Bank funding conditions are

[7] See "Households and non-financial corporations in the euro area: third quarter of 2019", European Central Bank, January 2020.

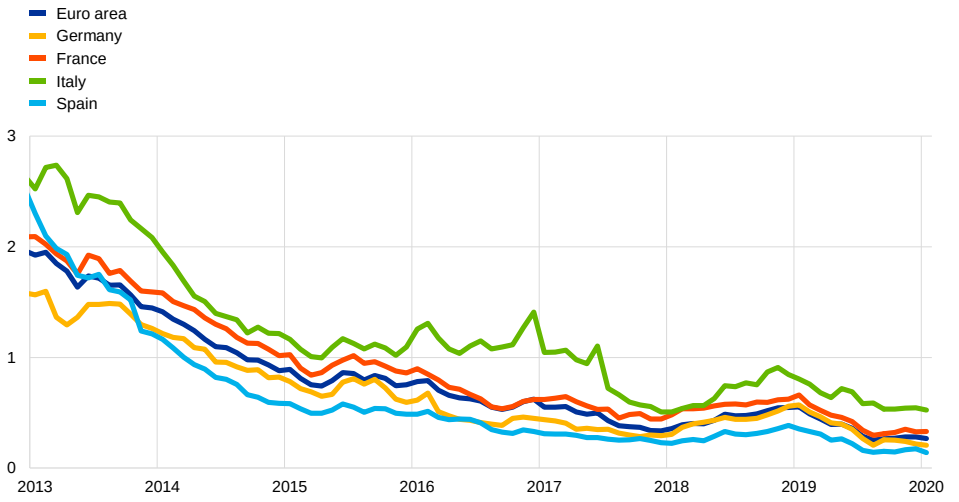
also benefiting from the TLTRO-III operations, as reported by banks in the BLS, as well as from the restart of the ECB's net asset purchases in November 2019.

The loan-to-deposit margins of euro area banks remained broadly stable in January. While loan-to-deposit margins on new business have been compressed since 2014, given the stronger decline in lending rates than in deposit rates, the profitability implications of this compression have been counteracted by increasing lending volumes. The overall effect on net interest income (as the product of lending margins and volumes) has been slightly positive over this period. Since the ECB's September 2019 deposit facility rate cut, the share of deposits, held by firms, that is remunerated at negative rates has increased further, thus supporting banks' loan-to-deposit margins, which stood at 1.34% in January 2020. Banks have also made further progress in improving their balance sheets, for instance by reducing non-performing loans. Still, euro area bank profitability remains low by historical standards, also owing to strong competition within the banking sector and from non-banks, and the need for higher cost efficiencies in the sector.[8]

Chart 22

Banks' composite cost of debt financing

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



Sources: ECB, Markit iBoxx and ECB calculations.
Notes: The composite cost of deposits is calculated as an average of new business rates on overnight deposits, deposits with an agreed maturity and deposits redeemable at notice, weighted by their corresponding outstanding amounts. The latest observation is for January 2020.

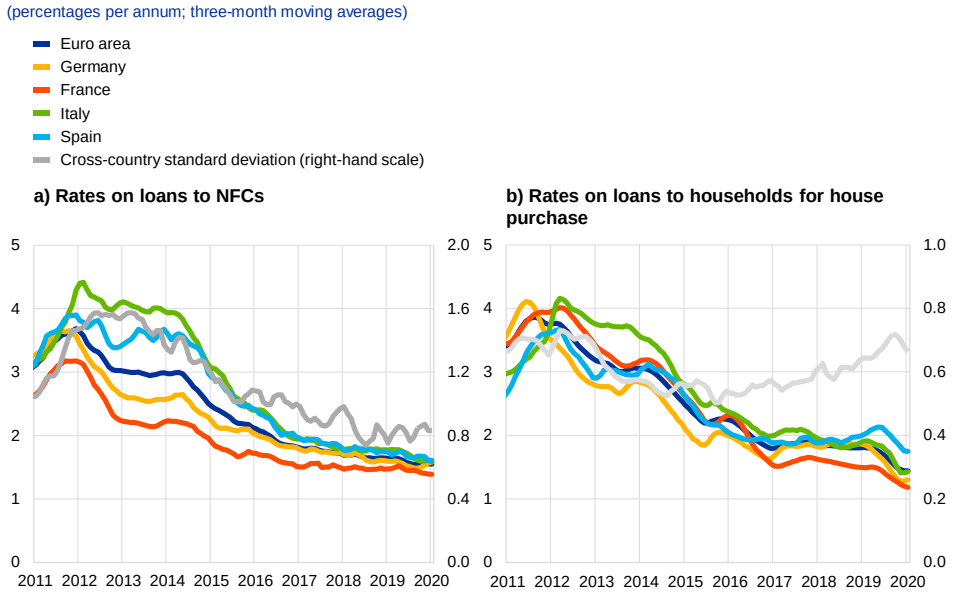
Favourable lending rates continue to support economic growth. Composite bank lending rates for loans to firms and for loans to households for house purchase have remained broadly stable in the three months up to January 2020 (see Chart 23). This is in line with contained movements in short-term market rates and notwithstanding the volatility in longer-term market rates. In January 2020, the composite bank lending rate for firms stood at 1.55%, unchanged from December and only marginally above its historical low in August 2019. The composite bank lending rate for housing loans remained broadly stable, at 1.44%, compared with its historical low of 1.41% in December 2019. Competitive pressures, favourable bank funding costs and the pass

[8] See "Financial Integration and Structure in the Euro Area", European Central Bank, March 2020

through of the ECB's deposit facility rate cut in September 2019, kept lending rates for loans to euro area firms and households around their historical lows. Overall, composite bank lending rates for loans to firms and households have fallen significantly since the ECB's credit easing measures were announced in June 2014. Between May 2014 and January 2020 composite lending rates on loans to firms and households for house purchase fell by around 140 and 150 basis points respectively.

Chart 23

Composite bank lending rates in selected euro area countries



Source: ECB.
Notes: The indicator for the total cost of bank borrowing is calculated by aggregating short and long-term rates using a 24-month moving average of new business volumes. The cross-country standard deviation is calculated using a fixed sample of 12 euro area countries. The latest observation is for January 2020.

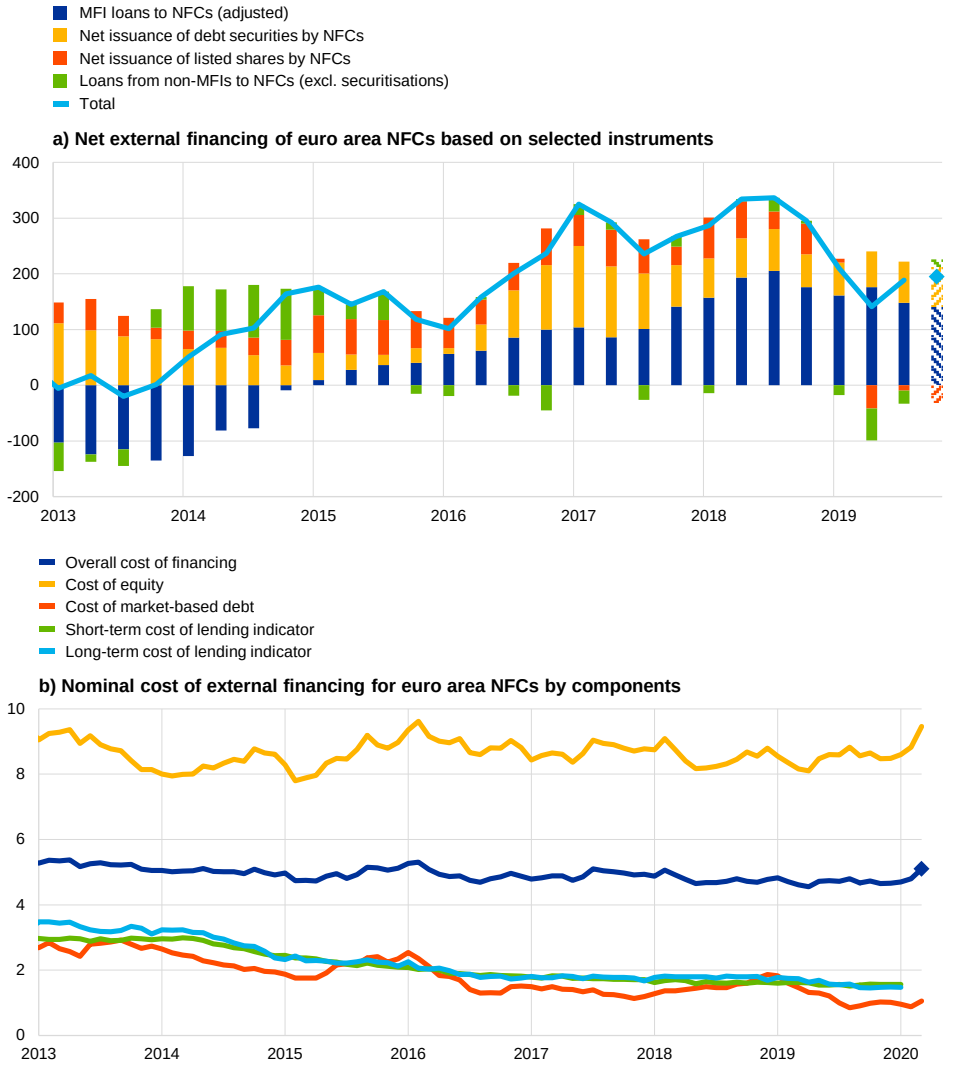
The annual flow of total external financing to euro area NFCs has stabilised at solid levels in the fourth quarter of 2019 (see panel (a) of Chart 24). Debt financing flows to NFCs have moderated since the fourth quarter of 2018 alongside the slowdown in economic activity. However, the downtrend in external financing flows has been halted in the final quarter of 2019. In 2019, the net issuance of bonds reached similar levels overall as in 2016-17, while exceeding by a significant margin the 2018 level. At the same time, bank borrowing by firms slowed down towards the end of 2019, owing to firms' decreased financing needs, related to the lagged effects of the moderation in economic activity since mid-2018, and despite favourable relative costs of debt financing. Loans from non-banks (non-MFIs) became less negative in the third quarter of 2019 before turning slightly positive in the fourth quarter, pointing to a modest strengthening of corporate bond issuance via NFC financing conduits. Recent data suggest that the net issuance of debt securities was strong in January and February 2020. The net issuance of listed shares became more negative in annual terms in the fourth quarter of 2019, reflecting continued weakness in issuance activity, a shift of listed shares to unquoted equity in the second quarter of 2019, and a sizeable base effect. In addition, the persistently higher cost of quoted equity, compared with firms' cost of debt financing, dampens the use of quoted shares as a financing instrument.

In January 2020 the cost of financing for NFCs stood close to the level it was at in September 2019 but is estimated to have increased significantly since then (see panel (b) of Chart 24). In January 2020 the overall nominal cost of external financing for NFCs, comprising bank lending, debt issuance in the market and equity finance, stood at 4.7%. As such, the cost of financing in January 2020 was only 14 basis points higher than in April 2019, when the series was at its historical low. However, since then, and until the end of the reference period (11 March 2020), the overall cost of financing is estimated to have sharply increased to 5.1%. This reflects an increase in both the cost of equity and the cost of market-based debt by 85 and 10 basis points, respectively. The developments in both cost indicators can be ascribed to the rapid and sharp deterioration in risk sentiment due to the spread of the Coronavirus that led to higher equity risk premia and wider corporate bond spreads (see Section 2).

Chart 24

External financing of euro area NFCs

(annual flows in EUR billions – panel (a); percentages per annum – panel (b))



Sources: Eurostat, Dealogic, ECB, Merrill Lynch, Bloomberg, Thomson Reuters and ECB estimates.
Notes: Panel (a): Net external financing is the sum of MFI loans, net issuance of debt securities, net issuance of listed shares and non-MFI loans. MFI loans are adjusted for sales, securitisation and cash pooling activities. Loans from non-MFIs include loans from other financial institutions and insurance corporations and pension funds' net of securitised loans. The patterned bar refers to the now-cast for Q4 2019. Panel (b): Overall cost of financing for NFCs calculated as a weighted average of the costs of bank borrowing, market-based debt and equity, based on their respective amounts outstanding. The blue diamond refers to the now-cast for March 2020 for the overall cost of financing, assuming that bank lending rates remain unchanged at their January 2020 levels. Latest observation for panel (a) is for Q3 2019 for euro area accounts data – estimates for Q4 2019 are based on ECB BSI and SEC data, and Dealogic. Latest observation for pane (b) is for 11 March 2020 for the cost of equity and the cost of market-based debt, and for January 2020 for the cost of lending.

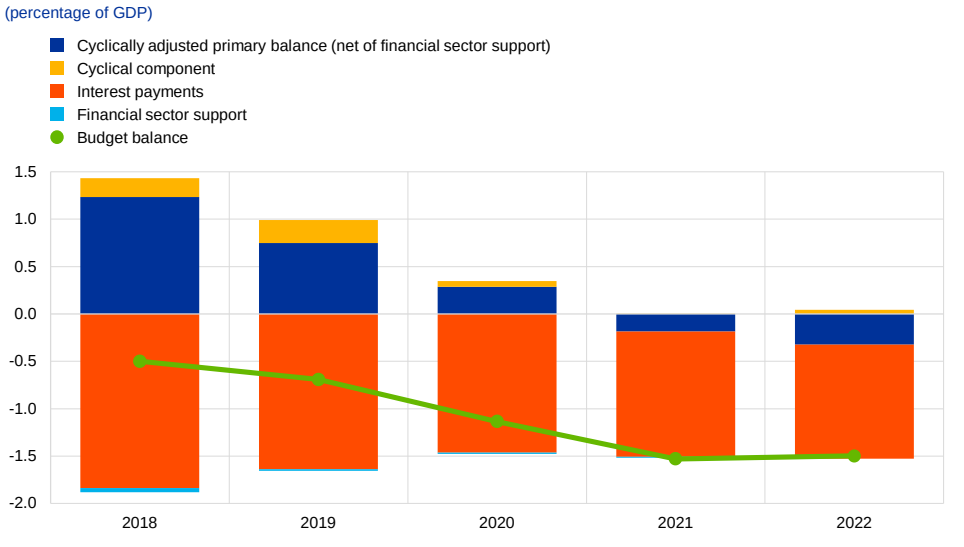
6 Fiscal developments

The euro area general government budget balance is projected to decline in 2020 and 2021 and to stabilise in 2022, according to the March 2020 ECB staff macroeconomic projections. The decline can be primarily attributed to lower primary surpluses. These developments are also reflected in the fiscal stance, which, according to the projections, is expected to be expansionary in both 2020 and 2021 and broadly neutral in 2022. Despite the relatively expansionary fiscal stance, the euro area government debt-to-GDP ratio in the projections is expected to remain on a gradual downward path owing to a favourable interest rate-growth differential and a somewhat positive primary balance for the entire period. Developments related to the spread of the coronavirus (COVID-19) after the projections were finalised do, however, point to a further expansion of the fiscal stance. In this respect, the Eurogroup's commitment to joint and coordinated policy action should be strongly supported.

In the March 2020 ECB staff macroeconomic projections, the euro area general government budget balance is projected to decline in 2020 and 2021 and to stabilise in 2022.[9] Based on the March 2020 ECB staff macroeconomic projections, the general government deficit ratio for the euro area is expected to increase from an estimated 0.7% of GDP in 2019 to 1.1% in 2020 and then to 1.5% in both 2021 and 2022 (see Chart 25). The decline in the budget balance in 2020 and 2021 stems mainly from a lower cyclically adjusted primary balance. This is partly compensated for by lower interest expenditure, while the cyclical component decreases marginally over the projection horizon.

Chart 25

Budget balance and its components



Sources: ECB and March 2020 ECB staff macroeconomic projections.
Note: The data refer to the aggregate general government sector of the euro area.

[9] See the "ECB staff macroeconomic projections for the euro area, March 2020" published on the ECB's website on 12 March 2020.

According to the March 2020 ECB staff projections, the euro area fiscal outlook for the period 2020-22 shows a noticeably more supportive fiscal policy than in the December 2019 Eurosystem staff projections. The euro area general government budget balance as a share of GDP has been revised down by 0.2 percentage points in 2020 and by 0.4 percentage points in both 2021 and 2022. These revisions are the result of a lower primary balance and a weaker than expected cyclical component, while the interest expenditure component remains unchanged.

The aggregate fiscal stance for the euro area is assessed to be expansionary in 2020 and 2021 and broadly neutral in 2022.[10] The fiscal stance is estimated to have been mildly expansionary in 2019 and is expected to loosen further in 2020 and 2021, providing support to economic activity. This is mostly on account of higher spending, in particular for transfers, in Germany, Spain and Italy, as well as cuts to both direct taxes and social security contributions in France and the Netherlands. In 2022 the fiscal stance is projected to be broadly neutral.

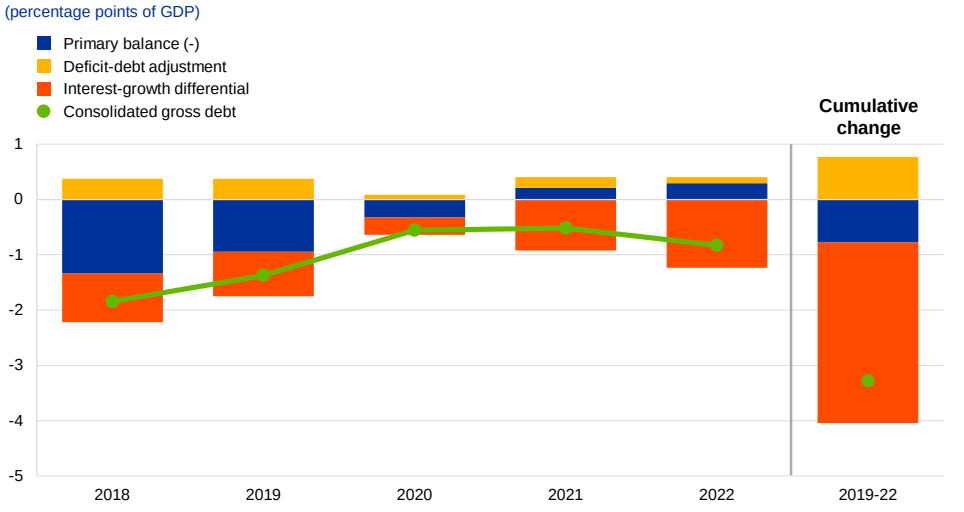
The euro area aggregate public debt-to-GDP ratio is projected to remain on a gradual downward path in the March 2020 ECB staff macroeconomic projections. According to the projections, the aggregate general government debt-to-GDP ratio in the euro area is expected to decline from 84.5% of GDP in 2019 to 82.6% of GDP in 2022. This reduction is supported by a favourable interest rate-growth differential[11] while the accumulated contribution from the primary balance is close to zero over the forecast horizon (see Chart 26). Compared with the December 2019 projections, the debt ratio is projected to decline more slowly, owing to lower projected primary surpluses and a less favourable cyclical component. The faster spread of the coronavirus since the March 2020 projections were finalised suggests that the path of the public debt-to-GDP ratio is expected to be worse than that foreseen in the projections.

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

[11] For more information, see the box entitled "Interest rate-growth differential and government debt dynamics", *Economic Bulletin*, Issue 2, ECB, 2019.

Chart 26

Drivers of change in public debt



Sources: ECB and March 2020 ECB staff macroeconomic projections.
Note: The data refer to the aggregate general government sector of the euro area.

The spread of the coronavirus has been a major shock to the global and euro area economies, requiring an ambitious and coordinated fiscal policy response. There is now a need for timely and targeted support for the health sector as well as for affected firms and households in order to address the public health challenge of containing the spread of the coronavirus and mitigate its economic impact. The Eurogroup's commitment to joint and coordinated policy action is therefore strongly supported.

Boxes

1 Using information in newspaper articles as an indicator of real economic activity

Prepared by Massimo Ferrari and Helena Le Mezo

Text analysis methods have been used extensively in the economic literature to measure macroeconomic risk and uncertainty.[12] However, there is limited evidence regarding the amount of information on real economic activity that can be extracted from such indices. This box presents an indicator for real economic activity in the United States based on the textual analysis of newspaper articles. The indicator is constructed using data from the Factiva database, which collects all articles published by major newspapers for a large set of countries. Newspaper articles published in the United States are extracted from the database and used to construct a text-based activity indicator.[13] For each day since January 1970, the indicator measures the number of articles that discuss a slowdown (or recession) in the US economy relative to the total number of articles published in the United States. Intuitively, the constructed index should co-move with the business cycle as newspapers devote more space to the subject of an economic slowdown. Moreover, the indicator should react faster to developments in the economic cycle that take time to become visible in aggregate macro variables and are often published with a lag. Finally, this index can be updated easily at a high frequency (on a daily basis) and can be applied to a large number of advanced and emerging market economies.

The constructed index can be used as a real-time tracker of US real economic activity. Chart A shows that the indicator correlates well with periods of economic slowdown in the United States when these are measured in terms of declines in industrial production or the recession dates established by the National Bureau of Economic Research (NBER). This correlation suggests that the text-based index can be used as a real-time indicator to track economic developments at a high frequency, as it contains relevant information on the business cycle.

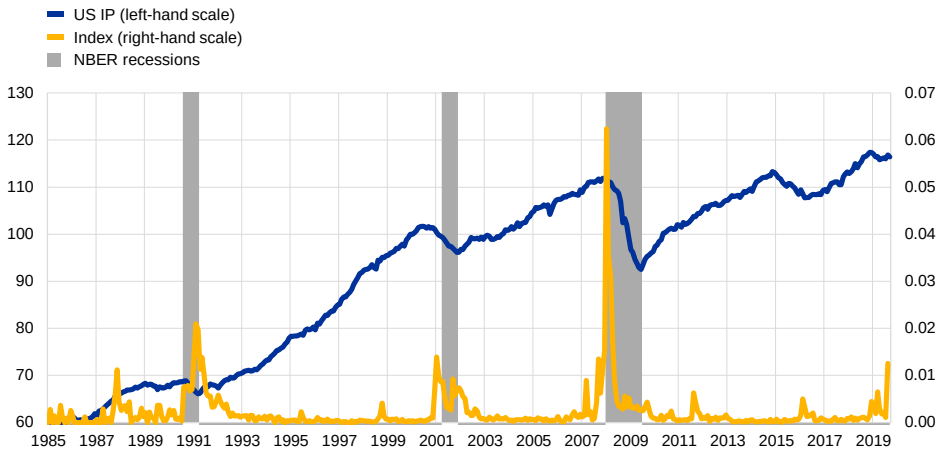
12 Recent examples include Caldara, D. and Iacoviello, M., "*Measuring Geopolitical Risk" International Finance Discussion Papers,* No 1222, Board of Governors of the Federal Reserve System (United States), 2018; Baker, R.S., Bloom, N. and Davis, S.J., "Measuring Economic Policy Uncertainty", *The Quarterly Journal of Economics*, Vol. 131(4), Oxford University Press, 2016, pp. 1593-1636; for a recent text analysis approach applied to the euro area, see Azqueta-Gavaldón, A., Hirschbühl, D., Onorante, L. and Saiz, L., "Sources of economic policy uncertainty in the euro area: a machine learning approach", *Economic Bulletin*, Issue 5, ECB, Frankfurt am Main, November 2019.

13 Using the same methodology as that adopted by Caldara, D. and Iacoviello, M., "Measuring Geopolitical Risk", *International Finance Discussion Papers*, No 1222, Board of Governors of the Federal Reserve System (United States), 2018.

Chart A

Text-based index and US recessions

(text-based slowdown indicator; US recessions and industrial production, index (2010=100))



Sources: Factiva, Haver Analytics and authors' calculations.
Notes: The text-based indicator is constructed based on the ratio between the number of articles published in the United States that discuss a slowdown in the US economy and the total number of articles published in the United States daily. The data are then aggregated at a monthly frequency. The latest observation is for January 2020.

The index also has predictive content for future economic activity. This assumption can be formally tested by adding the text-based indicator to a standard recession probability model.[14] The following equation is estimated:

$$P(Crisis)_{t+k} = \alpha + \beta^1\left[yield_t^{3-months} - yield_t^{10-year}\right] + \beta^2 Index_t + \varepsilon_{t+k} \qquad (1)$$

where the probability of a recession at the future horizon $(t+k)$ is forecast by the slope of the yield curve at the present horizon (the difference between short-term and long-term yields), which is a standard predictor of recession, and the text-based indicator.[15] The index provides additional information on the slope of the US yield curve. The goodness of fit of recession probability models is summarised by the so-called receiver operator curve (ROC), which can be seen as a measure of the accuracy of the predictions made using the model.[16] The ROC statistic is reported in Chart B and shows that the specification applying the newspaper article-based index is superior to the simple yield curve at short horizons. The inclusion of newspaper article data in the estimation significantly improves the performance of the model. This assessment is robust to a definition of recession other than that used by the NBER (whereby a recession is defined as eight consecutive months of contraction in industrial production) and to exclusion of the global financial crisis period.

14 Based on Wright, J.H., "The yield curve and predicting recessions", *Finance and Economics Discussion Series,* 2006-07, Divisions of Research and Statistics and Monetary Affairs, Federal Reserve Board, Washington D.C., February 2006.

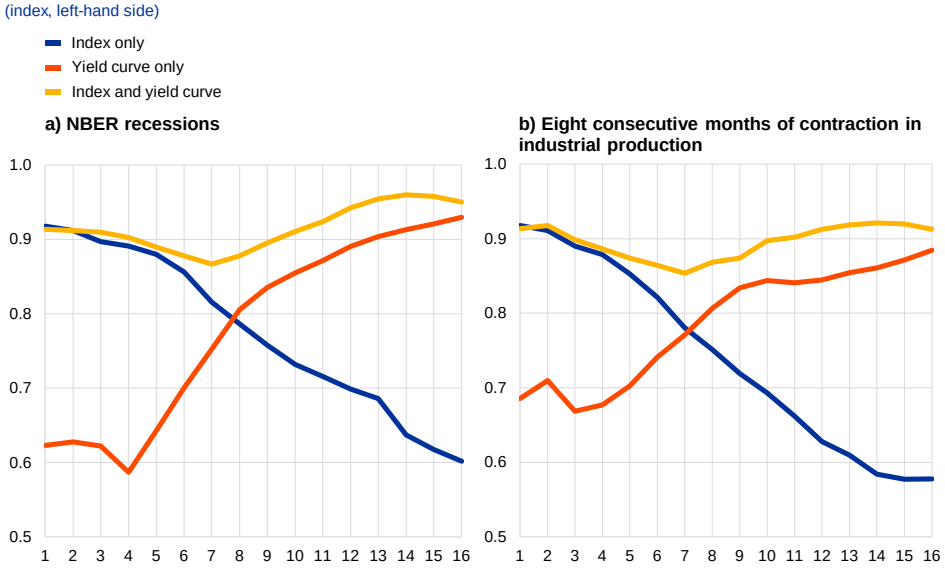
15 Yield-curve models have been revised recently in the context of the asset purchase programmes of major central banks. See the box entitled "US yield curve inversion and financial market signals of recession", *Economic Bulletin*, Issue 1, ECB, Frankfurt am Main, 2020.

16 The ROC compares the true positive, i.e. the assessment of a recession when there is really a recession, against false positives, i.e. the assessment of a recession when there is not a recession. The closer the estimated ROC statistic is to the vertical axis, the higher the predictive power of the model. Additionally, it is possible to summarise the ROC graph by computing the area that is below the ROC curve but above the 45 degree line (which implies random assignments). The larger the area below the curve, the more accurate the model is.

The evidence presented in this box shows that information extracted from newspaper articles is useful for monitoring economic developments and complements macroeconomic data. Newspaper articles collect a large set of information on the business cycle that does not appear immediately in macroeconomic time series. The fact that this type of text-based indicator is available and can be updated on a daily basis makes it useful and relevant for monitoring and predicting economic developments, particularly at short horizons.

Chart B

Goodness of fit statistics for the recession probability models at different month ahead forecast horizons



Sources: Factiva, Haver Analytics and authors' calculations.
Notes: The goodness of fit is based on the ROC statistic derived from the recession probability model estimated with: i) the yield curve only; ii) the text-based index only; iii) both the text-based index and the yield curve at each forecasting horizon. The statistic is computed as the normalised distance between the correct predictions of the model and a random assignment (i.e. 50% constant probability of contraction); the larger the distance, the higher the value of the ROC statistic. The latest observation is for January 2020.

2 The role of multinational taxation in the first reversal of foreign direct investment flows in the euro area

Prepared by Virginia Di Nino and Andrejs Semjonovs

This box explains how the taxation of multinational enterprises following the recent corporate tax reform in the United States has affected foreign direct investment (FDI) flows to and from the euro area.[17] In the euro area, like other advanced economies, the investments of resident companies abroad normally outpace the investments of foreign companies in the euro area. In the course of 2018, however, net FDI outflows (which can also be described as the euro area's net FDI assets – generally the investments of domestic companies in foreign affiliates) became inflows and net FDI inflows (or net liabilities, i.e. the net investments of foreign companies in the euro area) became outflows. These capital movements were to a significant extent related to certain measures of the US corporate tax reform that entered into force at the beginning of 2018.[18]

The reversal of euro area FDI flows was due entirely to flows from and to (i) the United States and (ii) offshore centres (see Chart A). US multinationals started disinvesting from the euro area (creating net FDI outflows in bilateral terms) in 2017, i.e. ahead of the corporate tax reform, but aggregate euro area FDI flows recorded a reversal through the second half of 2018 as offshore centres also began to divest from the euro area.

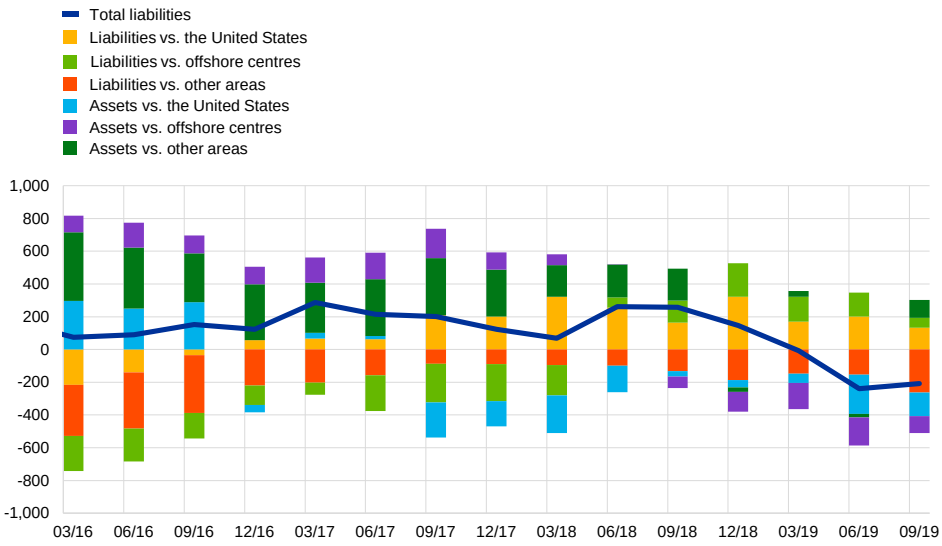
[17] See also the box entitled "Euro area foreign direct investment since 2018: the role of special purpose entities", *Economic Bulletin*, Issue 5, ECB, 2019.

[18] See also the article entitled "Multinational enterprises, financial centres and their implications for external imbalances: a euro area perspective" in this issue of the Economic Bulletin.

Chart A

Euro area FDI flows (net assets and net liabilities) by origin or recipient region

(four-quarter moving sum of transactions, EUR billions, non-seasonally adjusted)



Source: Eurostat.
Notes: For assets, a positive (negative) number indicates net purchases (sales) of non-euro area instruments by euro area investors. For liabilities, a positive (negative) number indicates net purchases (sales) of euro area instruments by non-euro area investors. Offshore centres are: Andorra, Antigua and Barbuda, Anguilla, Aruba, Barbados, Bahrain, Bermuda, Bahamas, Belize, the Cook Islands, Curaçao, Dominica, Grenada, Guernsey, Gibraltar, Hong Kong SAR, the Isle of Man, Jersey, Saint Kitts and Nevis, the Cayman Islands, Lebanon, Saint Lucia, Liechtenstein, Liberia, the Marshall islands, Montserrat, Mauritius, Nauru, Niue, Panama, the Philippines, Seychelles, Singapore, Sint Maarten, the Turks and Caicos Islands, Saint Vincent and the Grenadines, the British Virgin Islands, the US Virgin Islands, Vanuatu and Samoa. The latest observations are for the third quarter of 2019.

The reversal in net FDI flows occurred only in certain euro area financial centres, i.e. countries recording large financial flows, and took place through the transactions of special purpose entities (see Chart B). In other euro area economies, flows remained muted and no significant geographical recomposition of FDI transactions could be identified. Also, the double-edged reversal (assets and liabilities) reflects the high degree of co-movement between asset and liability flows in countries subject to the round-tripping and pass-through practices of multinational enterprises.[19] In Ireland, however, the retrenchment of gross FDI inflows and outflows primarily concerned transactions with other euro area financial centres (and not the United States) and materialised earlier, starting from the fourth quarter of 2017.[20] Given the complex structure of the global FDI network, a possible narrative consistent with this evidence is that some repatriation of profits from Ireland might have occurred via other euro area financial centres.

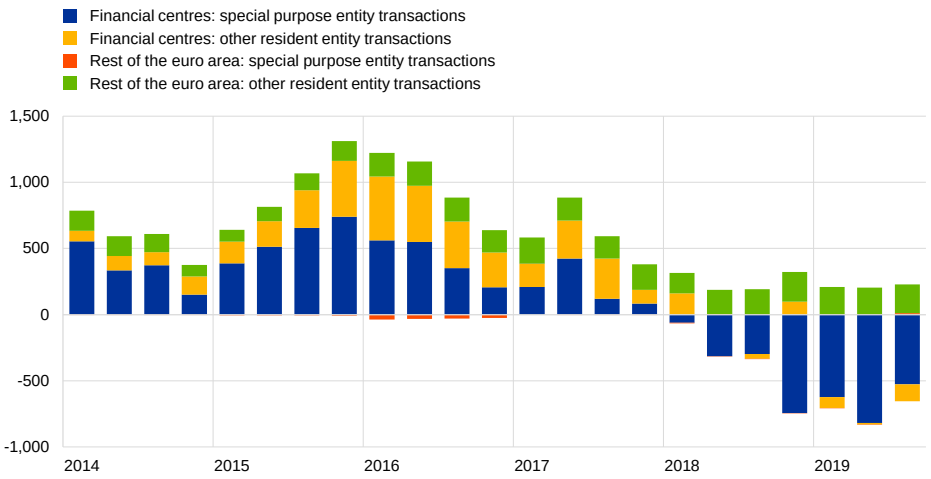
19 Round-tripping involves a company selling assets to another company (or companies), generally located in a different jurisdiction, with the agreement to buy back the same or similar assets at about the same price. Such transactions inflate revenues and costs without affecting profits. They are often associated with pass-through practices, where the other company pays taxes on asset yields and the original company obtains a tax rebate.

20 See Emter L., Kennedy, B. and McQuade, P., "US profit repatriations and Ireland's Balance of Payments statistics", *Quarterly Bulletin*, Central Bank of Ireland, Q2 2019.

Chart B

Euro area FDI liability transactions: special purpose entities vs. other resident affiliate entities

(four-quarter moving sum of transactions, EUR billions, non-seasonally adjusted)



Sources: OECD and Eurostat.
Notes: Blue and red areas reflect net inward investments in operating units which are special purpose entities. Yellow and green areas reflect net inward FDI in all other entities resident in the euro area which are affiliates of foreign companies. Financial centres are: Belgium, Luxembourg and the Netherlands. The rest of the euro area includes all other member countries except Spain, Cyprus, Latvia and Malta, which are excluded owing to a lack of data. The latest observations are for the third quarter of 2019.

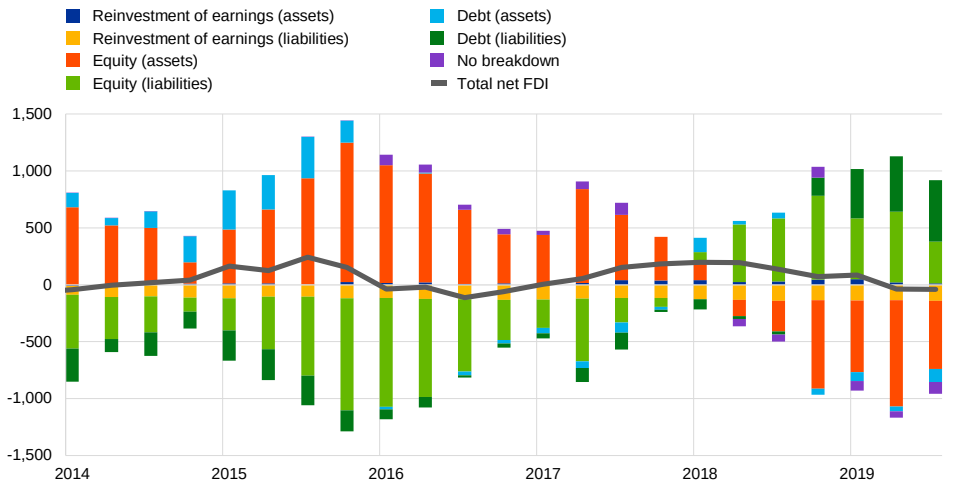
The decomposition of gross FDI flows by type of instrument shows that the reversal involved mainly equity but excluded the reinvested earnings component (see Chart C). In this respect, the reversal episode underlines the fact that FDI investment decisions primarily reflect tax considerations. It did not trigger a recomposition or relocation of FDI equity and debt to other euro area economies. Moreover, reinvested earnings were basically unaffected, as the past profits repatriated at the one-off preferential tax rate granted by the US corporate were not recorded as income distribution ("super" – or large, exceptional – dividends are recorded in the balance of payments under FDI equity transactions). As a result of this, and amid stable net FDI in Ireland and the redomiciliation to Ireland of some large US multinational enterprises, corporate tax revenues continued to expand in Ireland in 2018.[21]

[21] In the past, US corporate tax rate cuts seem to have increased employment and growth in Ireland via investment in externally financed industries. This time, however, there might be a risk of capital outflows, as result of changes in the activities of multinational enterprises in the country. See Clancy, D., "US corporate tax rate cuts: Spillovers to the Irish economy", *Working Paper Series*, No 38, European Stability Mechanism, 2019.

Chart C

Net FDI flows in euro area financial centres (assets and liabilities) by type of financial instrument

(Four-quarter moving sum of transactions, EUR billions, non-seasonally adjusted)



Source: OECD.
Notes: Data for Ireland were not released for some quarters for the debt, equity and reinvestment of earnings components. Data for Malta and Cyprus are not available. Net liabilities are reported in reverse scale on the negative section (when positive) of the vertical axis. The latest observations are for the third quarter of 2019.

While some provisions in the US tax reform were expected to have transitory effects on FDI transactions, the reform also contained measures against erosion of the tax base, which can affect gross and net FDI flows in the long run. The reform involved a one-time lower tax on unrepatriated past profits; however, the full tax exemption now in place for foreign earnings in the form of dividends generally applies equally whether they are repatriated or held abroad. This weakens the incentive for US multinationals to reinvest earnings abroad. Besides, the reform also contains measures against erosion of the tax base, which can affect gross and net FDI flows in the long run. It reduces incentives for US corporations to move their intangible assets offshore by allowing a tax deduction of up to 37.5% for foreign-derived intangible income. The reversal of gross euro area FDI flows might thus be a transition to a new foreign investment equilibrium. While any assessment is early, disinvestments continued in 2019 and, in euro area financial centres, affected not only equity liabilities but also the debt component of FDI (see Chart C). The monthly estimates for the last quarter of 2019 suggest that the reversal might have halted, and a normalisation of conditions maybe under way, but flows have remained fairly subdued in historical terms.

3 Liquidity conditions and monetary policy operations in the period from 30 October 2019 to 28 January 2020

Prepared by Pamina Karl and Marco Weißler

This box describes the monetary policy operations of the ECB during the seventh and eighth reserve maintenance periods of 2019, which ran from 30 October to 17 December 2019 and from 18 December 2019 to 28 January 2020, respectively. The review period encompasses the start of the two-tier system for remunerating excess liquidity holdings. Starting from the seventh reserve maintenance period, which began on 30 October 2019, this system exempts part of a credit institution's excess liquidity holdings (i.e. reserve holdings in excess of minimum reserve requirements) from negative remuneration at the rate applicable to the deposit facility.[22] Instead, these excess liquidity holdings are currently remunerated at an annual rate of 0%. Other recent changes include the net repayments of liquidity provided through targeted longer-term refinancing operations (TLTROs) as well as the resumption of asset purchases.

Liquidity needs

The average daily liquidity needs of the banking system, defined as the sum of net autonomous factors and reserve requirements, stood at €1,505.7 billion in the period under review. This was €53.7 billion lower than in the previous review period (i.e. the fifth and sixth reserve maintenance periods of 2019; see Table A). Net autonomous factors decreased by €55.4 billion, while minimum reserve requirements increased by €1.7 billion to €134.3 billion.

The decrease in net autonomous factors was driven primarily by an increase on the asset side of the Eurosystem balance sheet (net foreign assets and net assets denominated in euro). Autonomous factors on the asset side increased by €55.1 billion to €1,009.1 billion, reflecting both a €33.2 billion increase in net foreign assets, which was similar to the growth in the previous review period, and a €21.9 billion increase in net assets denominated in euro to €238.0 billion. Autonomous factors on the liability side remained almost unchanged on aggregate (down €0.4 billion). While other autonomous factors and banknotes in circulation rose by €42.3 billion and €20.0 billion, respectively, these increases were fully offset by lower government deposits, which averaged €219.8 billion in the period under review after reaching a historical high of €298.6 billion in the sixth reserve maintenance period. Overall, net autonomous factors – defined as liquidity-absorbing autonomous factors on the liability side less liquidity-providing autonomous factors on the asset side – fell to €1,371.4 billion.

[22] Eligible reserve holdings of financial institutions are computed on the basis of average end-of-calendar-day balances held in the institution's current account over the maintenance period. The exemption from negative interest rates applies to excess liquidity holdings in the current account up to a certain multiple of the institution's minimum reserve requirement. The Governing Council set the initial multiplier at six.

Table A

Eurosystem liquidity conditions

Liabilities

(averages; EUR billions)

	Current review period: 30 October 2019 to 28 January 2020						Previous review period: 31 July 2019 to 29 October 2019	
	Seventh and eighth maintenance periods		Seventh maintenance period: 30 October to 17 December		Eighth maintenance period: 18 December to 28 January		Fifth and sixth maintenance periods	
Autonomous liquidity factors	**2,380.2**	**(-0.4)**	**2,384.8**	**(-37.1)**	**2,375.0**	**(-9.8)**	**2,380.6**	**(+87.3)**
Banknotes in circulation	1,271.8	(+20.0)	1,262.9	(+10.1)	1,282.2	(+19.3)	1,251.8	(+17.8)
Government deposits	219.8	(-62.7)	226.6	(-72.1)	211.8	(-14.7)	282.4	(+11.9)
Other autonomous factors[1]	888.7	(+42.3)	895.3	(+24.8)	880.9	(-14.4)	846.4	(+57.6)
Current accounts above minimum reserve requirements	**1,510.1**	**(+284.9)**	**1,528.0**	**(+272.7)**	**1,489.2**	**(-38.8)**	**1,225.2**	**(-17.2)**
Minimum reserve requirements	**134.3**	**(+1.7)**	**134.1**	**(+0.9)**	**134.5**	**(+0.3)**	**132.6**	**(+2.5)**
Deposit facility	**256.4**	**(-253.6)**	**257.9**	**(-198.7)**	**254.6**	**(-3.3)**	**510.0**	**(-77.4)**
Liquidity-absorbing fine-tuning operations	**0.0**	**(+0.0)**	**0.0**	**(+0.0)**	**0.0**	**(+0.0)**	**0.0**	**(+0.0)**

Source: ECB.
Notes: All figures in the table are rounded to the nearest €0.1 billion. Figures in brackets denote the change from the previous review or maintenance period.
1) Computed as the sum of the revaluation accounts, other claims and liabilities of euro area residents, capital and reserves.

Assets

(averages; EUR billions)

	Current review period: 30 October 2019 to 28 January 2020						Previous review period: 31 July 2019 to 29 October 2019	
	Seventh and eighth maintenance periods		Seventh maintenance period: 30 October to 17 December		Eighth maintenance period: 18 December to 28 January		Fifth and sixth maintenance periods	
Autonomous liquidity factors	**1,009.1**	**(+55.1)**	**1,020.9**	**(+32.7)**	**995.4**	**(-25.5)**	**954.0**	**(+41.7)**
Net foreign assets	771.1	(+33.2)	773.3	(+14.8)	768.6	(-4.7)	737.9	(+38.5)
Net assets denominated in euro	238.0	(+21.9)	247.6	(+17.9)	226.9	(-20.7)	216.1	(+3.2)
Monetary policy instruments	**3,272.2**	**(-22.4)**	**3,284.3**	**(+5.1)**	**3,258.1**	**(-26.2)**	**3,294.6**	**(-46.6)**
Open market operations	3,272.2	(-22.4)	3,284.3	(+5.1)	3,258.1	(-26.2)	3,294.6	(-46.4)
Tender operations	644.0	(-39.9)	665.5	(-5.0)	619.0	(-46.5)	683.9	(-31.1)
MROs	2.3	(-0.2)	1.8	(-0.2)	2.9	(+1.1)	2.5	(-2.6)
Three-month LTROs	3.4	(+0.5)	2.7	(-0.1)	4.3	(+1.6)	2.9	(-0.3)
TLTRO II operations	589.8	(-87.3)	657.6	(-5.3)	510.8	(-146.8)	677.2	(-29.5)
TLTRO III operations	48.5	(+47.2)	3.4	(+0.6)	101.1	(+97.7)	1.3	(+1.3)
Outright portfolios	2,628.2	(+17.5)	2,618.8	(+10.1)	2,639.1	(+20.3)	2,610.7	(-15.1)
First covered bond purchase programme	2.0	(-0.8)	2.3	(-0.5)	1.7	(-0.5)	2.8	(-0.3)
Second covered bond purchase programme	2.9	(-0.3)	2.9	(-0.1)	2.9	(-0.0)	3.2	(-0.3)
Third covered bond purchase programme	263.8	(+2.8)	262.9	(+2.3)	264.8	(+1.9)	260.9	(-0.8)
Securities Markets Programme	47.9	(-4.9)	47.8	(-3.6)	47.9	(+0.0)	52.8	(-8.6)
Asset-backed securities purchase programme	28.2	(+2.1)	27.9	(+1.7)	28.6	(+0.7)	26.1	(-0.1)
Public sector purchase programme	2,099.9	(+12.3)	2,093.4	(+6.0)	2,107.6	(+14.3)	2,087.6	(-4.8)
Corporate sector purchase programme	183.5	(+6.2)	181.6	(+4.2)	185.6	(+4.0)	177.3	(-0.4)
Marginal lending facility	0.0	(-0.0)	0.0	(-0.0)	0.0	(+0.0)	0.0	(-0.2)

Source: ECB.
Notes: All figures in the table are rounded to the nearest €0.1 billion. Figures in brackets denote the change from the previous review or maintenance period.

Other liquidity-based information

(averages; EUR billions)

	Current review period: 30 October 2019 to 28 January 2020						Previous review period: 31 July 2019 to 29 October 2019	
	Seventh and eighth maintenance periods		Seventh maintenance period: 30 October to 17 December		Eighth maintenance period: 18 December to 28 January		Fifth and sixth maintenance periods	
Aggregate liquidity needs[1]	1,505.7	(-53.7)	1,498.4	(-69.0)	1,514.3	(+15.9)	1,559.5	(+48.2)
Net autonomous factors[2]	1,371.4	(-55.4)	1,364.3	(-69.9)	1,379.8	(+15.6)	1,426.9	(+45.6)
Excess liquidity[3]	1,766.5	(+31.3)	1,785.9	(+74.0)	1,743.8	(-42.0)	1,735.2	(-94.5)

Source: ECB.
Notes: All figures in the table are rounded to the nearest €0.1 billion. Figures in brackets denote the change from the previous review or maintenance period.
1) Computed as the sum of net autonomous factors and minimum reserve requirements.
2) Computed as the difference between autonomous liquidity factors on the liability side and autonomous liquidity factors on the asset side. For the purpose of this table, items in course of settlement are also added to net autonomous factors.
3) Computed as the sum of current accounts above minimum reserve requirements and the recourse to the deposit facility minus the recourse to the marginal lending facility.

Interest rate developments

(averages; percentages)

	Current review period: 30 October 2019 to 28 January 2020						Previous review period: 31 July 2019 to 29 October 2019	
	Seventh and eighth maintenance periods		Seventh maintenance period: 30 October to 17 December		Eighth maintenance period: 18 December to 28 January		Fifth and sixth maintenance periods	
MRO	0.00	(+0.00)	0.00	(+0.00)	0.00	(+0.00)	0.00	(+0.00)
Marginal lending facility	0.25	(+0.00)	0.25	(+0.00)	0.25	(+0.00)	0.25	(+0.00)
Deposit facility	-0.50	(-0.05)	-0.50	(+0.00)	-0.50	(+0.00)	-0.45	(-0.05)
EONIA[1]	-0.454	(-0.05)	-0.454	(+0.01)	-0.454	(+0.00)	-0.408	(-0.04)
€STR[2]	-0.539	(-0.04)	-0.539	(+0.00)	-0.540	(-0.00)	-0.496	(-0.05)

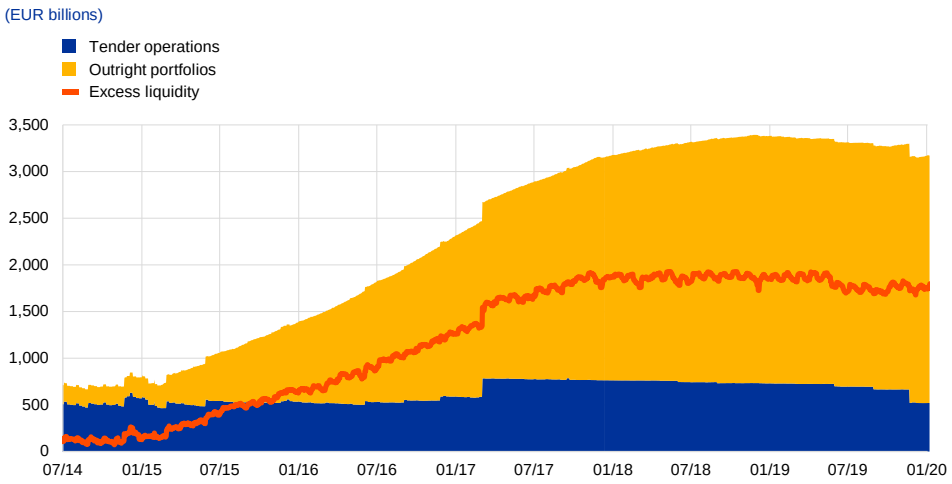
Source: ECB.
Notes: All figures in the table are rounded to the nearest €0.1 billion. Figures in brackets denote the change from the previous review or maintenance period.
1) Computed as the euro short-term rate (€STR) plus 8.5 basis points from 1 October 2019. Differences in the changes shown for the euro overnight index average (EONIA) and the €STR are due to rounding.
2) Pre-€STR figures are included in the calculation of averages before 30 September 2019.

Liquidity provided through monetary policy instruments

The average amount of liquidity provided through open market operations – including both tender operations and monetary policy portfolios – decreased by €22.4 billion to €3,272.2 billion (see Chart A). As during the previous two maintenance periods, this decrease was driven primarily by lower demand in tender operations. In contrast, and unlike in previous review periods in 2019, liquidity provided through monetary policy portfolios increased again as a result of the resumption of net purchases under the asset purchase programme (APP) in November 2019.

Chart A

Evolution of liquidity provided through open market operations and excess liquidity



Source: ECB.
Note: The latest observation is for 28 January 2020.

The average amount of liquidity provided through tender operations declined during the review period, as it did during the previous review period. The decrease of €39.9 billion to €644.0 billion was mainly due to lower liquidity provided through TLTROs. Financial institutions in the euro area voluntarily repaid €87.3 billion of TLTRO II funding on average during the two maintenance periods. This exceeded the uptake of new TLTRO III funding, which increased by €47.2 billion to €48.5 billion on average over the review period. In addition, liquidity provision via main refinancing operations (MROs) decreased slightly, from €2.5 billion to €2.3 billion. The observed average decrease would have been even larger without the year-end MRO operation, in which €7.9 billion was allotted. The outstanding amount of three-month longer-term refinancing operations (LTROs) increased slightly, by €0.5 billion.

Liquidity provided through the Eurosystem's monetary policy portfolios increased by €17.5 billion to €2,628.2 billion, owing to the resumption of net asset purchases. Average holdings increased by €12.3 billion to €2,099.9 billion in the public sector purchase programme (PSPP) and by €6.2 billion to €183.5 billion in the corporate sector purchase programme (CSPP). In addition, holdings under the third covered bond purchase programme (CBPP3) and the asset-backed securities purchase programme (ABSPP) increased by €2.8 billion and €2.1 billion, respectively.[23] Redemptions of bonds held under the Securities Markets Programme (SMP) totalled €4.9 billion in the review period.

Excess liquidity

As aggregate liquidity needs decreased, average excess liquidity increased compared with the previous review period, by €31.3 billion to €1,766.5 billion

[23] Even with full reinvestment, limited temporary deviations in the overall size and composition of the APP may occur for operational reasons. See the article entitled "Taking stock of the Eurosystem's asset purchase programme after the end of net asset purchases", *Economic Bulletin*, Issue 2, ECB, 2019.

(see Chart A). Despite lower provision of liquidity through tender operations, the decrease in net autonomous factors and the resumption of net asset purchases increased excess liquidity in the euro area.

In addition, the composition of excess liquidity was affected by the start of the two-tier system for remunerating excess liquidity holdings in the euro area as of the seventh maintenance period. This is due to the fact that only balances held in financial institutions' current accounts up to their maximum allowance are exempt from negative remuneration at the rate applicable to the deposit facility. This led to a rebooking of funds held by financial institutions from the deposit facility, which decreased by €253.6 billion, to their current accounts, which increased by €284.9 billion.

Interest rate developments

The €STR remained broadly stable during the seventh and eighth maintenance periods. The ECB's deposit facility rate and the MRO and marginal lending facility rates remained unchanged during the period under review. Consequently, the €STR remained stable in the seventh and eighth maintenance periods at -53.9 and -54.0 basis points, respectively. The introduction of the two-tier remuneration system did not significantly affect the level of the €STR. The EONIA, which as of October 2019 is calculated as the €STR plus a fixed spread, moved in parallel with the €STR.

4 The implications of fiscal measures to address climate change

Prepared by Steffen Osterloh

This box assesses the impact of fiscal measures to reduce greenhouse gas emissions on growth and inflation over the March 2020 ECB staff projection horizon. Current EU-wide emission reduction targets and policy objectives for the period 2021-30 are based on the 2030 climate and energy framework, which was adopted by the European Council in 2014. The framework sets binding targets for cutting greenhouse gas emissions to below 1990 levels, namely a reduction in emissions of 20% by 2020 and at least 40% by 2030. Policies to reduce carbon emissions in the European Union comprise: (a) the EU Emissions Trading System (ETS), which covers around 45% of the EU's greenhouse gas emissions and limits emissions from, in particular, sectors with heavy energy use within the European Union plus Iceland, Liechtenstein and Norway, such as power stations, energy-intensive industries and flights between airports located in the European Economic Area (EEA); and (b) national measures in sectors that are not covered by the ETS, such as transport, heating and agriculture.

The EU ETS provides certainty about annual emission reduction in the sectors covered but leaves uncertainty concerning the development of allowance prices. The EU ETS works on the "cap and trade" principle, setting a cap on the total amount of certain greenhouse gases that can be emitted by installations covered by the system and allowing firms to trade their emission allowances. The cap is reduced over time so that total emissions fall. The share of auctioned allowances, i.e. allowances that are not given away for free to companies, has been increased over time, rising to 57% in the trading period 2013-20. The price which companies have to pay for the auctioned share of the allowances has an effect similar to a tax on the carbon content of a company's inputs, as it immediately increases their production costs. The empirical literature shows that cost increases due to previous ETS allowance price rises were, to a large extent, passed through to consumer prices.[24]

The development of allowance prices in the EU ETS over the past two years has possibly generated some limited inflationary pressures, but markets expect, at most, further moderate increases over the projection horizon. Having been relatively stable at low levels of, on average, around €6 per tonne of CO2 between 2012 and 2017, the ETS price rose significantly in 2018 and 2019, ending 2019 at around €25 per tonne. This increase also translated into a surge in public revenues from the auctioned allowances and additional costs for companies. This implies a positive impact on euro area inflation in 2018 and 2019 and a negative but very small impact on GDP growth. However, despite the ongoing rationing of emission allowances, ETS futures currently do not point to a further surge in prices, which suggests that no major impact on consumer prices is expected in the coming years. Nevertheless, volatile allowance prices continue to represent a risk factor for the HICP.

[24] See, for example, Martin, R. et al., "The Impact of the European Union Emissions Trading Scheme on Regulated Firms: What Is the Evidence after Ten Years?", *Review of Environmental Economics and Policy*, Vol. 10, issue 1, 2016, pp. 129 -148.

The reduction in emissions in the remaining (non-ETS) sectors is enshrined in the Effort Sharing Regulation. This legislation establishes binding annual greenhouse gas emission targets for EU Member States for the periods 2013-20 and 2021-30. Overall, compared with 2005 levels, the national targets aim to collectively deliver a reduction of around 10% by 2020 and 30% by 2030. In contrast to ETS sectors, Member States are responsible for designing policies to achieve national targets for non-ETS sectors.

A national carbon pricing system for sectors not covered by the EU ETS, which is expected to have positive effects on inflation, was recently agreed in Germany. As part of the "climate package" agreed in December 2019, a national carbon pricing system for the transport and building heating sectors will be introduced in 2021. As the carbon pricing system will start with a fixed price that will gradually increase until 2025, it initially resembles a carbon tax. The December 2019 projections reflected the initial coalition agreement of a starting price of €10 per tonne of CO2 for 2021. A positive effect on HICP between 2021 and 2022 was forecast, while the effect on GDP was expected to be small.[25] The impact on prices and GDP is expected to be muted as a large share of the revenue from the sale of allowances will be used to compensate industry and consumers, particularly via lower electricity prices resulting from a reduction in the levy imposed by the German Renewable Energy Act (*Erneuerbare-Energien-Gesetz* – EEG) in line with increasing CO2 prices. Moreover, climate-related spending will be increased. The March 2020 projection incorporates the revised package, which envisages a much higher price of €25 per tonne of CO2 in 2021, rising to €55 per tonne by 2025. However, the macroeconomic implications of this revision are expected to be small since the effects of the higher CO2 price will be lessened, reflecting the announcement that the additional revenue will be fully used to further lower electricity prices by reducing the EEG levy.

Few increases in carbon taxes are expected in the next years. Together with carbon cap and trade schemes, carbon taxes, which are levied on the carbon content of fuels, are regarded as the most cost-effective instrument to reduce carbon emissions. An automatic gradual increase in carbon prices to reach national emission reduction targets would allow households and firms to adapt, but none of the eight euro area countries with a carbon tax currently has such an automatic mechanism in place. Ireland has passed legislation for an increase in carbon taxes for 2020 with very minor fiscal implications for the euro area as a whole and the government has stated its intention to introduce linear increases in the tax until 2030. In Portugal, a mechanism links the carbon tax rate to the price of EU ETS allowances in the preceding year, which has recently led to some increases. The remaining countries currently do not foresee an increase in their carbon tax rates.

Several countries are planning increases in environmental taxes over the projection horizon, but their overall size is limited at the euro area level. More than half of euro area countries plan to increase environmental taxes other than carbon taxes over the next two years. These increases mostly relate to excise taxes on energy and fuels, but also concern taxes on vehicles and airline tickets. The

[25] For a quantification, see "The impact of the Climate Package on economic growth and inflation", *Monthly Report*, Deutsche Bundesbank, Frankfurt am Main, December 2019.

biggest increase in such taxes is foreseen in the Netherlands, although the macroeconomic effects will be largely offset by compensatory cuts to energy taxes. In the other countries, these measures are typically small (in almost every case the annual increase is below 0.1% of GDP) and for the euro area as a whole their size is marginal. Moreover, in some cases, indirect tax measures with an expansionary effect will be implemented, such as tax cuts to incentivise the use of public transport, e-mobility or LPG. Finally, there is very little use of direct tax measures to support the green transition.

Overall, the impact of climate measures on euro area GDP and prices in 2020-22 is expected to be low, but in the medium term the tightening of emission reduction targets could pose an upside risk to the inflation outlook. While some effect on euro area inflation is expected for 2021 and 2022 from the German package, no other large Member State currently has concrete plans for a similar carbon pricing system. Moreover, no substantial effects are expected in other countries that already have carbon taxes in place. Several Member States are planning increases in environmental taxes but the implications for growth and prices over the projection horizon are projected to be small for the euro area as a whole. However, in the medium term the impact of climate measures on prices could increase owing to a possible further tightening of emission reduction targets as part of the European Green Deal which was announced by the European Commission in December 2019. More ambitious targets may have a positive effect on EU ETS emission allowance prices and could entail the implementation of new national measures with a positive effect on the general price level, such as a national ETS or carbon taxes.

Articles

1 Multinational enterprises, financial centres and their implications for external imbalances: a euro area perspective

Prepared by Virginia Di Nino, Maurizio Michael Habib and Martin Schmitz

This article analyses how the operations of large multinational enterprises (MNEs) affect the external account of the euro area and, in general, financial centres. The increased ease of moving intangible assets, profits and headquarters across borders poses challenges to the current framework of international statistics and economic analysis. First, the article shows how MNE operations are recorded in cross-border statistics, as well as the challenges in measuring such data. Second, the article highlights evidence of the impact that MNEs have on the external account of the euro area – this is most evident in current account balances and foreign direct investment in euro area financial centres, often involving special-purpose entities (SPEs). Third, the article looks at the tendency of financial centres to report current account surpluses that may be tentatively attributed, in part, to the activity of MNEs. Multilateral initiatives could help to improve the transparency of MNE operations and ensure an exchange of information across borders for statistical and tax purposes.

1 Introduction

The rise of large, profitable, global firms and the mobility of intangible assets[26] have increased the relevance of firms' profit-shifting activities, posing challenges to the current framework of international statistics. The balance sheets of large multinational enterprises (MNEs)[27] have become very sizeable. The assets of the largest listed companies in major advanced economies, amounting to a value of several hundred billions of US dollars, are roughly equal to the gross domestic product of many small open economies. In order to reduce their tax burden, MNEs carry out a range of activities: these include shifting profits to low-tax jurisdictions by manipulating transfer pricing[28] and shifting intra-company positions – often this involves complex financial structures and the creation of SPEs in low-tax, or no-tax, jurisdictions. These activities are extremely difficult to track. The novelty of some

[26] Intangible assets include non-physical items such as goodwill items, brand recognition products and intellectual property products (IPPs). IPPs, such as licenses and patents, result from varying combinations of research, development, investigation and innovation that lead to knowledge; using this knowledge is restricted by laws or other means of protection (see European system of accounts - ESA 2010). Research and development leading to assets of intellectual property are recorded as gross fixed capital formation.

[27] Multinational enterprises are enterprises producing goods or delivering services in more than one country. MNE headquarters are rarely located in more than one country (the home country). However they operate in a number of other countries (the host countries).

[28] Transfer pricing refers to the rules and methods for pricing transactions within and between enterprises under common ownership or control.

activities – in particular the growth in intellectual property products and improved opportunities to strategically choose their location – poses significant challenges for the existing framework of national and international statistics, which is based on the concept of residence[29].

International tax avoidance by MNEs is not a novel phenomenon but its rapid growth increasingly attracts the attention of academics and policy makers.[30] Global firms respond to tax incentives when recording worldwide income among affiliates. A recent survey of this literature finds that a decrease by one percentage point in the statutory corporate tax rate translates into a 1% expansion of before-tax income for global firms.[31] Importantly, this study shows that the estimated impact appears to be increasing over time. Transfer pricing and licensing seem to be the main channels of tax avoidance – these appear to be more important than financial planning.[32] International taxation may also alter the geography of foreign direct investment (FDI): a higher statutory tax rate in a target investment country discourages the acquisition of firms in that country, while lower tax burdens may attract FDI related to profit-shifting activities.[33] Another area of research focuses on the implications of these tax-avoidance activities for the measurement of the external wealth of nations and the diminished ability of governments when it comes to taxing the corporate profits of global firms.[34]

A number of policy initiatives at the international level have been launched to counteract the intensification of tax avoidance. The Organisation for Economic Co-operation and Development (OECD) estimates that 240 billion US dollars in tax revenues are lost globally every year as a result of tax avoidance by MNEs. As a result, the OECD and the G20 sponsored the Base Erosion and Profit Shifting (BEPS) Project, including an action plan that identifies 15 actions intended to limit international tax avoidance.[35] This initiative currently involves over 135 countries, including the European Union (EU) Member States. The EU built on the BEPS Project's recommendations by adopting two Anti-Tax Avoidance Directives, which entered into force between 2019 and 2020. The EU reform package includes concrete measures to reduce tax avoidance, boost tax transparency and move towards a level playing field

29 See Avdjiev, S., Everett, M., Lane, P.R. and Shin, H.S., "Tracking the international footprints of global firms", *BIS Quarterly Review*, March 2018.

30 See, for example, Tørsløv, L., Wier, L. and Zucman, G., "The Missing Profits of Nations", *NBER working paper*, No 24701, August 2018.

31 See Beer. S. de Mooij, R and Liu, L., "International corporate tax avoidance: A review of the channels, magnitudes, and blind spots", *Journal of Economic Surveys*, Special issue, January 2019, pp. 1-29.

32 See Heckemeyer, J. H., Overesch, M., "Multinationals' profit response to tax differentials: Effect size and shifting channels", *Canadian Journal of Economics/Revue canadienne d'économique*, Vol. 50, No 4, 2017.

33 See Arulampalam, W., Devereux, M.P. and Liberini, F., "Taxes and the location of targets, *Journal of Public Economics*, Vol. 176, 2019, pp. 161-178.

34 See Zucman, G., "Taxing across Borders: Tracking Personal Wealth and Corporate Profits", *Journal of Economic Perspectives*, fall, Vol. 28, No 4, 2014, pp. 121-148.

35 See OECD BEPS 2015 Final Reports.

for all businesses in the EU, but also new requirements for MNE financial reporting (see Box 1).[36]

Box 1

Tax avoidance and transparency: policy initiatives at the international and EU level

Prepared by Maurizio Michael Habib and Martin Schmitz

At the international level, the OECD, with the support of the G20, championed work on limiting tax avoidance. The OECD/G20 BEPS Project, finalised in 2015, proposes measures to reduce tax avoidance; it also includes new requirements for MNE financial reporting, in particular for country-by-country reporting by 2025. Many of the recommendations of the OECD/G20 BEPS Project have been transposed at the EU level via the European Commission's broad Anti-Tax Avoidance Package.[37] This package also includes the revision of the Administrative Cooperation Directive, proposing country-by-country reporting between Member States' tax authorities on key tax-related information concerning multinationals operating in the EU.

Statistical compilers need to closely cooperate internationally to ensure that MNE activities are recorded consistently from country to country. This means that they have to share confidential data on MNEs and their subsidiaries across borders. The GNI pilot project, launched by the European Statistical System Committee in 2018, takes steps in this direction; it aims to jointly assess the consistency of statistical recording among national statistical authorities, using a sample of 25 MNEs in Europe.

Moreover, some national statistical authorities have set up large case units to monitor the activities of MNEs nationally. However, no formal coordination exists yet at the international level. Further development of legal entity identifiers and business registers would also be instrumental in improving national accounts and b.o.p. statistics.[38]

The traces of MNE operations are particularly apparent in the external statistics of financial centres. Since the euro area hosts some significant financial centres, this article discusses the dynamics of their external accounts. We adopt a standard operational definition of financial centres on the basis of the size of their stock of foreign liabilities relative to GDP. These are therefore economies where financial activities tend to dominate domestic economic activity. In particular, financial centres are defined as the ten advanced economies with the largest ratios of foreign liabilities to GDP in a large sample of more than 60 countries. These ten financial centres include six euro area economies (Belgium, Cyprus, Ireland, Luxembourg, Malta and the Netherlands) and four non-euro area economies (Hong Kong SAR, Singapore,

36 See Directive (EU) 2016/1164 of 12 July 2016 laying down rules against tax avoidance practices that directly affect the functioning of the internal market (OJ L 193, 19.7.2016, p. 1) and Directive (EU) 2017/952 of 29 May 2017 amending Directive (EU) 2016/1164 as regards hybrid mismatches with third countries (OJ L 144, 7.6.2017, p. 1).

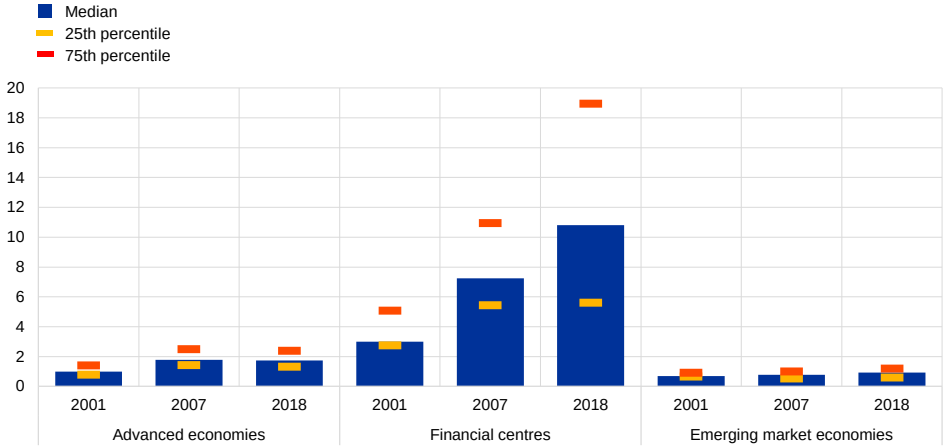
37 See the European Commission's Anti-Tax Avoidance Package.

38 Initiatives in this field include the LEI (Legal Entity Identifier), the Register of Institutions and Affiliates Database (RIAD) – which is a business register, operated by the European System of Central Banks (ESCB) – and the Eurogroup's Register (EGR), which is used for statistical purposes on MNEs in the EU and operated by the European Statistical System.

Switzerland and the United Kingdom).[39] Chart 1 shows the ratio of foreign liabilities to GDP for three groups of countries: advanced economies (excluding financial centres), financial centres and emerging market economies. In contrast to the effect it had on other advanced economies, the global financial crisis in 2008 does not appear to have dented the rise in the international financial integration of financial centres. In financial centres the median value of foreign liabilities increased, from around seven times GDP before the global financial crisis, to almost 11 times GDP at the end of 2018; the dispersion of the distribution of this statistic – foreign liability to GDP – markedly increased over the same period.

Chart 1

Ratio of total foreign liabilities to GDP



Sources: IMF Balance of Payments Statistics and ECB staff calculations.

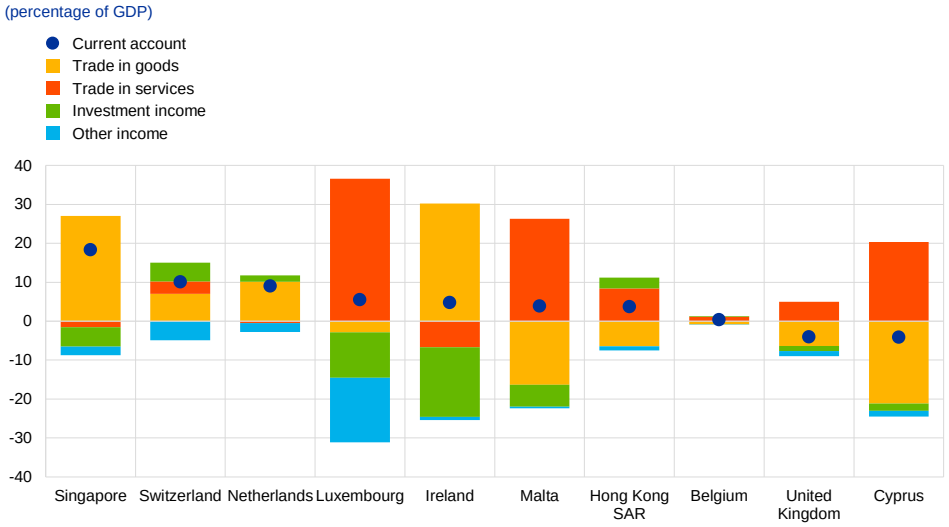
The importance of MNEs within the global economy has increased over time – as has the role of financial centres. It is worth considering whether this has an impact on current account imbalances, particularly on those of large financial centres. Financial centres tend to record large current account surpluses: eight out of the ten financial centres, as defined in this article, had a current account surplus over the past two decades on average. However, each one has its own business model, which is reflected in the diverse composition of their current accounts. Chart 2 shows the breakdown of the current accounts of these economies into their main subcomponents since 2010, when the stock of FDI liabilities started to grow rapidly. For the first group of economies – Singapore, Switzerland, the Netherlands and Ireland – the current account surplus is mainly the outcome of a large surplus in the balance of goods. As explained in Section 2 and Section 3, the activities of MNEs (such as merchanting and

[39] These economies (with the exception of the United Kingdom) are also the largest hubs in terms of the stock of foreign direct investment (FDI) to GDP. FDI is a component of the balance of payments (b.o.p.) and international investment position (i.i.p.) that is closely related to the activities of MNEs. In this article, to identify financial centres and exclude oil producing countries that tend to report large gross foreign asset positions, we focus on gross foreign liabilities instead of the sum of assets and liabilities, using IMF Balance of Payments Statistics. The activities of small off-shore financial centres fall outside the scope of this article. This is because detailed b.o.p. statistics are not always available. Moreover, the huge size of the external balance sheet of offshore centres relative to their GDP would distort some of the results shown in the article. It should be noted that advanced economies classed as financial centres are not necessarily considered to be tax havens for corporate taxation purposes. In general, these financial centres have relatively low corporate tax rates, but this is not necessarily always the case. For instance, the statutory corporate tax rates of Belgium, the Netherlands and Malta are above the average rate of all other economies in our sample.

contract manufacturing) may boost the goods balance of financial centres. For a second group of economies – Luxembourg, Malta and Hong Kong – the surplus is mostly due to the service balance, in turn driven by the financial services sector.

Chart 2

Average current account balances of financial centres between 2010 and 2018



Sources: IMF Balance of Payments Statistics and ECB staff calculations.

The correct measurement of external statistics, such as those discussed in this article, is important for central banks. Large external imbalances may raise concerns about the sustainability of economic growth and about financial stability, which can affect monetary policy and macroprudential policies. For instance, central banks monitor external accounts to assess the equilibrium value of exchange rates, while noting potential misalignments – this is because abrupt and significant corrections in exchange rates may influence inflation developments. A distorted representation of aggregate current account imbalances could provide flawed signals to policy makers.

This article is structured as follows. Section 2 explains how typical operations by MNEs are recorded in balance of payments (b.o.p.) and international investment position (i.i.p.) statistics; it also highlights relevant challenges faced when measuring these statistics. Section 3 aims to gauge the quantitative relevance of MNE operations for the external accounts of euro area countries, in particular distinguishing financial centres from other euro area economies, and focusing on aspects of trade and the composition of euro area FDI. Section 4 summarises and concludes the article.

2 Recording multinational enterprise operations in balance of payments statistics

2.1 The origins of measurement challenges

The operations of large MNEs affect national accounts statistics and, in particular, external accounts, thus creating challenges for statistical compilation and economic analysis.[40] This section reviews how typical MNE operations are captured in b.o.p. and i.i.p. statistics; it also highlights some of the associated measurement challenges. MNE tax planning strategies mainly affect b.o.p. data in three ways: (i) by shifting profits to affiliates in low-tax jurisdictions, which can involve moving IPPs or manipulation of transfer prices on intra-firm trade; (ii) by shifting intra-firm debt obligations and capital linkages; (iii) by redomiciling headquarters and legal incorporations to financial centres with favourable tax arrangements. This section also shows why these activities have different implications for the current account and i.i.p. of countries hosting MNEs and their affiliates.

Measurement challenges are caused by friction between residence-based national statistics methodologies and the global activities and ownership structures of large MNEs. B.o.p. and national accounts statistics, and their associated data collection processes, are based on the residency concept, according to which each institutional unit[41] is resident of one economic territory: the place where they have their centre of predominant economic interest. However, MNEs tend to organise their production chains and corporate structures across the globe involving numerous legal entities, including SPEs (see Box 2).[42] Data on these entities are recorded in the national b.o.p. statistics for the economy of the country where they reside. Consequently these data are not consolidated across borders with the home country of their parent MNE.[43]

40 See Stapel-Weber, S. et al., "Meaningful Information for Domestic Economies in the Light of Globalization - Will Additional Macroeconomic Indicators and Different Presentations Shed Light?", *NBER Working Paper,* No 24859, 2018.

41 The following qualify as institutional units: households, corporations, non-profit institutions, government units and legal or social entities recognised by law or society, or other entities that may own or control them.

42 The UNCTAD World Investment Report 2015 shows that larger MNEs are associated with a greater complexity of their internal ownership structures. The top 100 MNEs in UNCTAD's Transnationality Index have on average more than 500 affiliates across more than 50 countries, with seven hierarchical levels, involving 20 holding companies.

43 The BIS provides accounts for international banking groups consolidated to their home country (in the locational banking statistics by nationality). In a similar vein, Tissot 2016 ("Globalisation and financial stability risks: is the residency-based approach of the national accounts old-fashioned?" *BIS Working Papers*, No 587, 2016) argues that large MNE groups should be consolidated with the home country. This would require the sharing of confidential data across borders, as statistical data collection is also organised according to the residency principle.

Box 2
Towards a recording of special-purpose entities in cross-border statistics

Prepared by Martin Schmitz

The use of SPEs by MNEs has increased rapidly in recent years.[44] According to a recent Task Force of the Balance of Payments Committee (BOPCOM) at the International Monetary Fund (IMF), an SPE is: (i) a formally registered or incorporated legal entity that is resident in an economy and recognised as an institutional unit with little or no employment (up to a maximum of five employees), little or no physical presence, and little or no physical production activities in the host economy; (ii) directly or indirectly controlled by non-residents; (iii) established to obtain specific advantages provided by the host jurisdiction; (iv) transacting almost entirely with non-residents with large parts of the financial balance of a cross-border nature.[45] The IMF BOPCOM Task Force proposed this internationally agreed definition of SPEs with the aim of collecting comparable cross-country data that separately identify SPEs in cross-border statistics. This is because the size of SPE-related cross-border financial flows and positions often tends to be outsized relative to a country's domestic economy, blurring the analysis of macroeconomic statistics in the affected countries.

There is a high presence of SPEs in a number of euro area countries. This group of countries includes Cyprus, Ireland, Luxembourg, Malta and the Netherlands, which are all part of the financial centres group shown in Chart 1. In these economies SPEs have a significant impact on the i.i.p. and cross-border transactions, mainly affecting FDI but also portfolio and other investment. Moreover, in some cases, SPEs have non-financial assets (such as IPPs) on their balance sheet.

EU economies with SPE presence tend to a have a well-developed legal, financial and consulting services sector.[46] MNEs may set up SPEs to organise their internal financing arrangement, which requires the availability of highly specialised service providers such as lawyers, tax consultants and financial sector experts in the economies that are hosting SPEs. Tax-avoidance strategies, for instance, often involve the establishment of complex corporate structures involving SPEs across several EU countries.

The IMF BOPCOM Task Force's definition of SPEs would be helpful **in ensuring the availability of internationally consistent external sector statistics with a separate breakdown for SPEs.** The IMF BOPCOM aims to publish data that separately identify SPEs in cross-border statistics by the end of 2021. Achieving this goal would require further practical guidance on the application of the definition of SPEs in the light of their heterogeneous nature and their cross-border activities.

Measurement challenges are exacerbated by digitalisation and the increasing importance of IPPs, which are particularly relevant for financial centres. Over time the corporate structures of MNEs have become increasingly dynamic as a result of the redomiciling of headquarters and the increased relevance of intangible assets (such as patents and copyrights), which can be moved across borders with greater

44 See Lane, P.R. and Milesi-Ferretti, G.M., "International Financial Integration in the Aftermath of the Global Financial Crisis", *IMF Economic Review,* 66, 2018, pp. 189–222.

45 See the IMF Committee on Balance of Payments Statistics (BOPCOM)'s Final Report of the Task Force on Special Purpose Entities, 2018.

46 See Jellema, T., Pastoris, F. and Picon-Aguilar, C., "A European perspective to observing and reporting on SPEs", *ISI World Statistics Congress,* 2019, and Galstyan, V., Maqui, E., McQuade, P., "International debt and Special Purpose Entities: evidence from Ireland", *ECB Working Paper Series*, No 2301, ECB, Frankfurt am Main, July 2019.

ease than physical assets, such as factories. These phenomena can have large effects in terms of magnitude and volatility of statistical indicators, which become especially visible in those economies where MNE transactions and balance sheets are large relative to the size of the domestic economy.

2.2 MNEs and current account balances

To trace the impact that MNE operations have on external accounts, various components of the b.o.p. need to be looked at separately.[47] According to the b.o.p. identity, it holds that

$$CA + KA + EO = FA \qquad (1)$$

where *CA* stands for the current account balance, *KA* for the capital account balance (comprising mainly transfers of capital and non-produced non-financial assets), *EO* for errors and omissions (capturing any statistical discrepancy), and *FA* for the financial account balance.[48]

MNE operations affect various items of a country's current account balance, the key variable measuring trade, and income and transfer flows vis-à-vis non-residents. The current account consists of the trade balances in *goods* and *services* as well as cross-border factor income (*primary income)* and transfers (*secondary income*), with the first three being directly affected by the actions of MNEs:

$$CA = Goods + Services + Primary\ Income + Secondary\ Income \qquad (2)$$

Cross-border production arrangements and merchanting activities related to MNEs can affect the trade-in-goods component of the current account. This might involve foreign subsidiaries of MNEs (in what is known as offshoring) or an unrelated foreign company (i.e. outsourcing). B.o.p. statistics are based on the concept of change in economic ownership. Which means, in contrast to international trade statistics that measure all goods crossing a country's border, trade in goods recorded in b.o.p. statistics also includes *contract manufacturing* and *merchanting*. In *contract manufacturing*, an MNE hires a foreign company to produce a good. During the production process, the ownership of the inputs remains with the MNE and hence no trade flows are recorded in the b.o.p. (with the exception of an import by the MNE of manufacturing services from the foreign company that is producing the good). However, the b.o.p. does include the sale of the final products to third countries, which is consistent with the change in ownership principle. *Merchanting* is the process whereby a company purchases a good from an entity resident abroad, and subsequently sells it to a buyer in a third country without the good crossing the border of the country where the merchant is based.[49] If such transactions involve foreign

47 Lane, P.R., "Risk Exposures in International and Sectoral Balance Sheet Data", *World Economics*, Vol. 16, Issue 4, 2015, pp. 55-76.

48 The financial account balance is defined in terms of net financial outflows, i.e. the net purchases of foreign assets by domestic residents minus the net incurrence of liabilities by domestic residents vis-à-vis foreign residents.

49 The difference between revenues from the sale and purchase of the good (net of any expenses incurred to finance, insure, store and transport the good) is recorded as net exports of merchanting in the goods balance of the country where the company resides.

entities belonging to the same group, their pricing has a decisive impact on the amount and location of profits booked, which is in line with the well-established concept of transfer pricing.[50]

MNE business operations affect trade in services, reflecting the rise of the knowledge economy and digitalisation. As IPPs can often be easily moved across borders within an MNE group, possibly involving SPEs, they affect exports and imports.[51] IPPs are hard to value at market prices and, therefore, MNEs may use them to avoid taxation. For example, one entity of an MNE might own the group's IPP assets, while other entities in the same group pay licence fees and royalties for its use.

The primary income balance, which is dominated by investment income flows, is another component of the current account affected by MNE operations.[52] *Investment income* reflects the receipts and payments generated by an economy's external assets and liabilities (such as dividends and interest), and can be further decomposed into functional categories of the b.o.p. (FDI, portfolio investment, other investment and reserve assets).

MNE operations are particularly visible in FDI income.[53] Income on FDI comes from its equity and debt components. Equity income can be further decomposed into dividends (profits distributed to the direct investor) and reinvested earnings (profits retained in the foreign affiliate). Crucially, the direct investor's decision to reinvest earnings (i.e. to keep them in a foreign subsidiary) is recorded twice in offsetting ways in the b.o.p. – once as income on FDI, and once as a reinvestment of equal size in the financial account. In practice, MNEs can use complex corporate structures to optimise their tax burden – for example, by concentrating reinvested earnings in certain jurisdictions and by organising intragroup debt obligations. Apart from FDI, the cross-border ownership of MNEs may also affect portfolio investment in equity. In portfolio investment equity, only dividend payments are recorded in the income account, while non-distributed profits are not included.[54]

The MNE operations described in this article mainly affect the composition of a country's current account balance, while leaving the level of the current account balance unchanged. For instance, let's first assume that a company residing in "country A" manufactures a pharmaceutical product and exports it to

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50 In many countries tax authorities apply what is known as the arms-length principle to transfer pricing (i.e. the rules for pricing intra-group transactions). According to this principle, intra-group transactions need to be priced in the same way as transactions with unrelated firms.

51 Trade in IPPs is included in the other business services category of the b.o.p., while the royalties and fees for use of these assets are recorded as charges for the use of intellectual property. Non-produced intangible assets are recorded in the b.o.p.'s capital account.

52 Primary income also includes *compensation of employees* and *other primary income*.

53 An FDI relationship exists when a foreign direct investor holds equity that entitles it to 10% (or more) of the voting power in the direct investment enterprise. Once the FDI relationship is established between two entities, all financial transactions between them are recorded as FDI.

54 The asymmetric treatment of reinvested earning in FDI and portfolio investment equity is seen, in some studies, as creating biases in the current account. See, for example, Thomas J. Jordan's speech at the University of Basel from the 23 November 2017, which notes an upward bias for the Swiss current account surplus as the FDI profits (distributed and retained) earned by Swiss MNEs are included in the Swiss current account. As these MNEs are to a large extent owned by non-Swiss residents via portfolio equity investments only dividend payments "leave" Switzerland via the income account. While not recorded in the current account, the non-distributed profits should increase the market value of the Swiss MNEs and hence increase the portfolio equity liabilities in the i.i.p. of Switzerland.

"country B". This will generate a trade surplus in "country A" and a trade deficit in "country B". Now, assume that the company resident in "country A" decides to move production offshore to a subsidiary, which is resident in "country C" (a financial centre economy) and subsequently the goods are sold to "country B". This implies, all other things being equal, that the current account of "country A" records a profit – from the subsidiary in "country C" – equal in size to the net exports recorded before the decision to move production offshore. Thus, the value of the current account balance of "country A" is the same in either scenario, but the composition is altered in the second scenario because an investment income surplus replaces a trade surplus.

In contrast, MNE redomiciliation strategies – i.e. relocating their headquarters to another country – may have a significant impact on headline current account balances.[55] Even if the redomiciliation of an MNE is not associated with additional economic activity in the economy of residency, the current account balance may be affected in several ways (e.g. due to attribution of net exports resulting from contract manufacturing or IPP related services trade). Primary income may be affected due to the differing treatment of reinvested earnings in FDI and portfolio equity. The country hosting the redomiciled global firm will record an improvement in the *net FDI position* and deterioration in the *net portfolio equity position*, to the extent that its shareholders are located outside the economy that hosts the new headquarters, which is typically the case for a small FDI hub. However, these two offsetting positions produce two different income streams. Reinvested earnings from foreign subsidiaries are recorded as income receipts and boost the recorded current account balance, whereas profits payments to foreign MNE shareholders are only recorded if they are distributed as dividends (in portfolio investment).

2.3 MNEs and cross-border financial and national accounts

Mirroring the current account, MNE operations also affect the financial account of the b.o.p. and external assets and liabilities. Changes to a country's net i.i.p. can be broken down into net financial transactions as captured in the financial account (*FA*), revaluations due to changes in exchange rates and other asset prices (*REV*) and other volume changes (OVC).[56]

$$IIP_t - IIP_{t-1} = FA_t + REV_t + OVC_t \qquad (3)$$

MNEs have a particularly large impact on FDI, both in the i.i.p. and the financial account. All FDI transactions (such as withdrawals of equity and reinvestment of earnings) are recorded in the financial account and hence affect the i.i.p. as shown in equation (3). Redomiciliations, which imply cross-border movements of MNE balance sheets, may give rise to OVC as defined in equation (3) and can thereby substantially change a country's i.i.p.

55 For a numerical example on the impact of redomiciliation on the current account, see Avdjiev et al., "Tracking the international footprints of global firms", *BIS Quarterly Review*, March 2018.

56 Other volume changes include, for example, reclassifications, write-downs, breaks arising from changes in sources and methods, and changes in the residency of companies.

Finally, it should be noted that MNE activities not only impact cross-border statistics but also affect the broader national accounts. A case in point is Ireland, where investment income flows, related to redomiciled MNEs, the depreciation of IPPs and aircraft leasing, had a large impact on Irish GDP and GNI.[57] As a result, Ireland's Central Statistics Office publishes a number of modified economic indicators (such as GNI* and a modified current account CA*) that exclude these phenomena and thereby provide a more focused view of domestic economic developments.

3 How do multinational enterprise activities affect the euro area balance of payments?

MNE operations affect the external accounts of the euro area, though their impact varies markedly across the 19 euro area countries. The aggregate b.o.p. of the euro area masks the varied impact of MNE activities on the external statistics of each individual country. Euro area countries can be classified into two groups, which present marked differences in their external accounts: six economies that are specialised in providing financial services[58] and another 13 economies that are not.

The size, composition and volatility of the current account and financial account balances of euro area financial centres are significantly affected by MNE transactions. Section 3.1 presents stylised facts on the euro area b.o.p. related to the activity of specialised subsidiaries, such as SPEs in financial centres, whose location is primarily determined by tax-related, financial and regulatory considerations. Section 3.2 then focuses on the impact that SPEs have on FDI.

3.1 Euro area current account

When comparing the composition and size of the current accounts of financial centres with those of other economies in the euro area, five key features stand out.

First, financial centres in the euro area share a similar current account composition: they exhibit large trade surpluses that are partly counterbalanced by income deficits. This is shown in Chart 3 and corroborated by the empirical evidence in Box 3 based on a larger sample of the top ten global financial centres. The trade surpluses of financial centres often reflect exports with large value added, such as those related to licences in the field of information and communications technology. The literature on global value chains (GVCs) has established that value added is mainly created in very upstream activities (e.g. research and development, design and financial services) or very downstream activities (e.g. merchanting, logistics, royalties from licences, branding and marketing) – financial centres appear to have

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57 See Lane, P.R., "Notes on the treatment of global firms in national accounts", *Economic Letter Series,* Vol. 2017, No 1, Central Bank of Ireland, 2017.

58 This first group includes Cyprus, Luxembourg, Ireland, the Netherlands, Malta and Belgium. They are defined as financial centres according to the size of their foreign liabilities to GDP, as described in Section 1 of this article.

comparative advantages in several of these activities.[59] If production is fragmented across borders, the allocation of value added across the firm's network may result in financial centres appropriating a significant part of the value added on a global level. Income deficits can also reflect the practice of booking profits in financial centres.

Box 3

Financial centres and current account imbalances

Prepared by Maurizio Michael Habib

This box provides an empirical assessment of the size of current account imbalances in financial centres compared with other countries. As noted throughout this article, MNE activities widen the gross external positions and the current accounts of financial centres, while also affecting their composition. Moreover, financial centres tend to report current account surpluses. To a large extent, these observed patterns may be ascribed to the concentration of financial activities in a limited number of financial centres, which may not exclusively reflect MNE activities, but also those of banks, other financial intermediaries and individual investors resident in financial centres. It is, therefore, important to widen this analysis to the various subcomponents of financial centre current accounts, including the goods balance, the services balance and the investment income balance.

Empirical evidence confirms that the current account surpluses of financial centres, after controlling for other potential determinants of current account balances, are particularly large from a global perspective. Current account balances and their main subcomponents, across a panel of more than 60 economies since the early 2000s, are regressed on a number of traditional drivers, such as the net foreign asset position, GDP growth, terms of trade, the oil trade balance and per capita GDP. Table A reports the regressions results for the dummy variable identifying financial centres. Notably, this variable is positive and statistically significant in the first two columns of Table A. This confirms that, everything else being equal, financial centres tend to have larger current account surpluses and trade in goods surpluses – the latter is potentially the outcome of MNE merchanting and contract manufacturing activities. Financial centres post particularly large surpluses in the services balance (see column (3) of Table A), possibly related to financial activities that are not necessarily related to MNEs. In contrast, financial centres tend to report larger deficits in the investment income balance because the dummy in column (4) is negative and statistically significant, providing further support to the finding related to the income balance of euro area economies in Section 3.1. Finally, further analysis – not included here – suggests that the positive relationship between the status of financial centres and the current account (and the negative relationship between financial centres and investment income) has become stronger in recent years.

[59] See Cheng, K., Rehman, S., Seneviratne, D., Zhang, S., "Reaping the benefits from Global Value chains", IMF, 2015; "Mapping Global Value Chains", OECD, 2013; "Interconnected Economies: benefiting from Global Value Chains", OECD, 2013.

Table A

Drivers of the current account and financial centres

Dependent variable	(1) Current account	(2) Trade in goods	(3) Trade in services	(4) Investment income
Financial centre dummy	5.29***	4.63***	6.13***	-1.93***
	(1.27)	(0.87)	(1.67)	(0.83)
Observations	1,061	1,089	1,089	1,061
R-squared	0.36	0.57	0.26	0.34
Countries	61	61	61	61

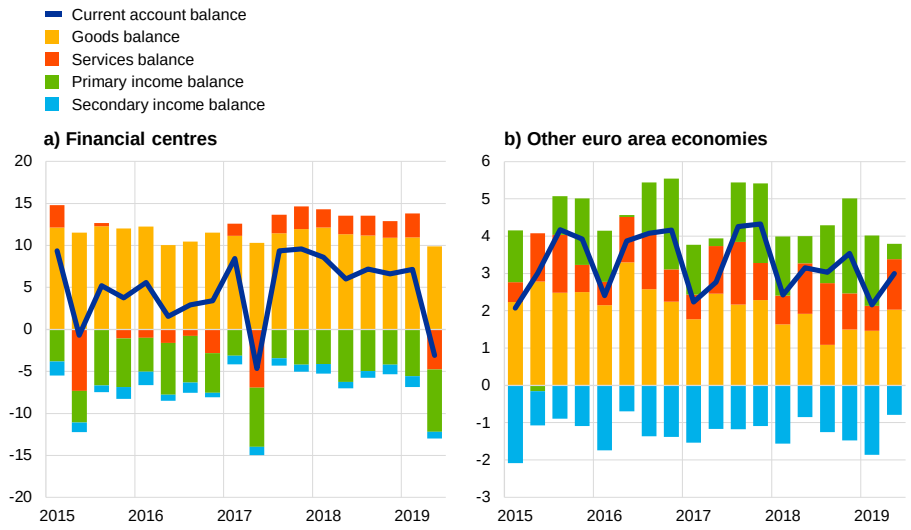
Source: ECB staff calculations.
Notes: The dependent variables are measured as a percentage of GDP using annual data from the period 2001-2018. The model for the current account in column (1) includes the net foreign asset position, GDP growth, terms of trade, the oil trade balance and per capita GDP as control variables. The model for trade in goods and services in columns (2) and (3) includes the same regressors as in (1), excluding the net foreign asset position. The model for the investment income balance in column (4) includes only the oil trade balance and the net foreign asset position as control variables. Pooled regressions estimated with Prais-Winsten heteroskedastic panels corrected standard errors (reported in parenthesis) and controlling for panel-specific autocorrelation of the residuals.

Second, the negative income balances recorded by euro area financial centres partly reflect the redistribution of profits to foreign shareholders. The sum of the income deficits in financial centres was 5% of their cumulated GDP in 2018, whereas the primary surplus in the other euro area economies stood at 1.6% of GDP. The global value added retained in financial centres is ultimately owned by foreign investors that receive an after tax profit which is recorded as income deficits. In practice, however, while aggregate income deficits are very common in euro area financial centres, not all arise from FDI income. They may also be driven by portfolio income, as in the case of Luxembourg and Cyprus. Heterogeneity in income balance composition reflects specific business models, i.e. different net direct investment and portfolio investment asset positions, as well as their position in the global capital network and in relation to other financial centres.

Third, the practice of moving value added to low-tax euro area jurisdictions may also inflate their trade surpluses, while producing the opposite effect in higher-tax economies. This is suggested by the different scale of the vertical axes in Chart 3. MNEs pursue several strategies aimed at avoiding taxes that, while vested differently, ultimately boil down to value added being shifted across borders; these strategies affect the trade balances of euro area countries.

Chart 3

Current account balances of financial centres and other economies in the euro area



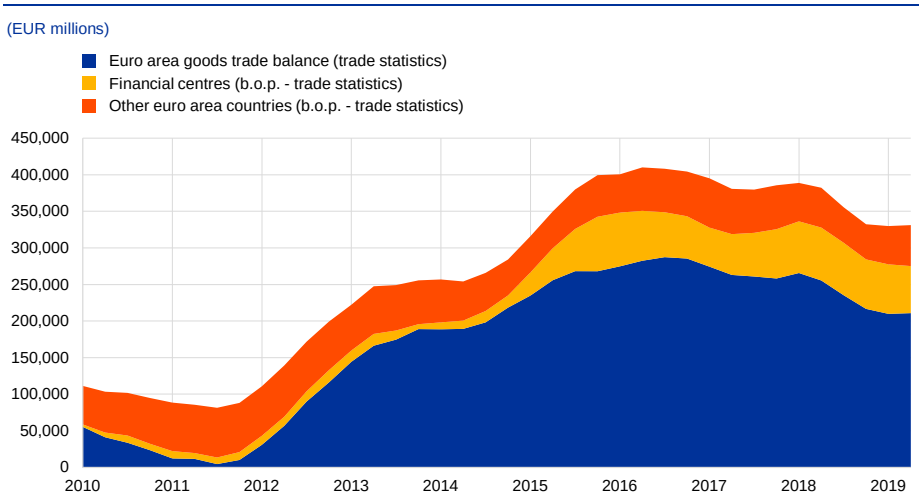
Source: ECB and Eurostat.
Notes: Financial centres refer to Ireland, Belgium, Luxembourg, the Netherlands, Malta and Cyprus. The financial accounts of the two groups of countries are not netted out for intragroup flows. This chart is based on quarterly data. The last available observation is from the second quarter of 2019.

Available evidence shows that, as a result, the trade surplus of euro area financial centres stood at 13% of their combined GDP at the end of 2018. As shown in Chart 3, this contrasts with a surplus of less than 3% in the average of other euro area economies. Moreover, the surplus recorded by financial centres has tripled over the past decade, mirroring the growth in FDI recorded in the financial account of the b.o.p.

Fourth, contract manufacturing and merchanting conducted by entities resident in financial centres have generated a growing discrepancy between b.o.p. statistics and international trade statistics for euro area financial centres. Different concepts underlying the compilation of b.o.p. data with that of international trade statistics lead to some differences (see Section 2.2). In the euro area the gap between these two sources has been growing over time, in particular since 2015 (see Chart 4). Among euro area countries, financial centres account for the bulk of the growing discrepancy, whereas the discrepancy has remained stable for the other economies. This may be partly driven by MNE practices such as change of domicile and outsourcing of merchanting activities to specialised subsidiaries located in financial centres.

Chart 4

Euro area goods trade balance: the growing gap between b.o.p. and international trade statistics



Source: ECB and Eurostat, authors' calculations.
Notes: The blue area is the net exports of the euro area as recorded in national trade statistics. The yellow and the orange areas depict the difference between b.o.p. and trade statistics in financial centres and other euro area economies, respectively. The group of financial centres includes Ireland, Belgium, Luxembourg, the Netherlands, Malta and Cyprus. This chart is based on quarterly data. The last available observation is from the second quarter of 2019.

Fifth, the trade surplus of financial centres is mainly driven by value added that is produced elsewhere (i.e. foreign value added) and then re-exported. This contrasts with the group of other euro area economies, whose cumulated trade surplus primarily reflects domestic value added that is traded with final consumers. For a more detailed discussion of this feature, see Box 4.

Box 4

A representation of trade balances in terms of value added: financial centres versus other euro area economies

Prepared by Virginia Di Nino

The goods and services we buy are composed of inputs from various countries from around the world. As a result, the trade balance of each country can be decomposed in terms of (i) the value added that the exporting country itself has produced in every relevant transaction, and (ii) the value added produced by its partner economies in every relevant transaction. The former is called domestic value added (DVA). The latter is known as foreign value added (FVA). An additional useful distinction can be made between transactions directly involving the country that absorb the production (DIR) and transactions related to the intermediate stages of GVCs. This taxonomy helps better understand the

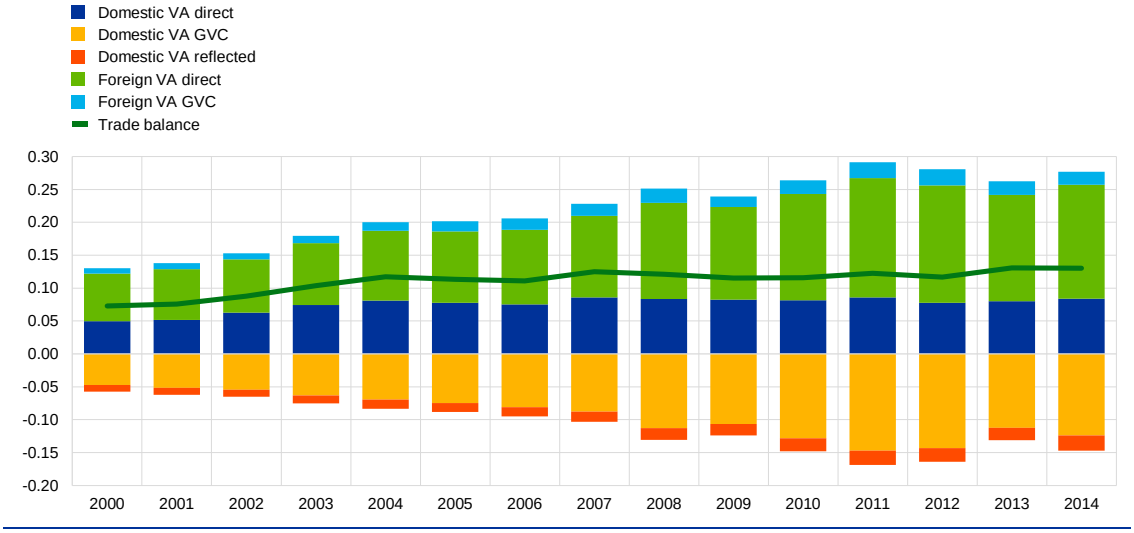
mechanisms generating the large surpluses of financial centres in the euro area as well as their contribution to the creation of global value added.[60]

Financial centres usually present large trade surpluses in value added derived from other countries, which cross the borders of these financial centres before reaching final consumers abroad (FVA-DIR). In other words, while financial centres import very little FVA that is absorbed domestically, they re-export large amounts of FVA directly to the final consumers in other countries, see Chart A – the green bars. This is not the case elsewhere. In particular, in the other euro area economies the trade surpluses reflect primarily domestic value added that is directly traded with the final consumers (DVA-DIR), as shown in Chart B – the blue bars.

Chart A

Trade balance in value added for euro area financial centres

(as a share of GDP)

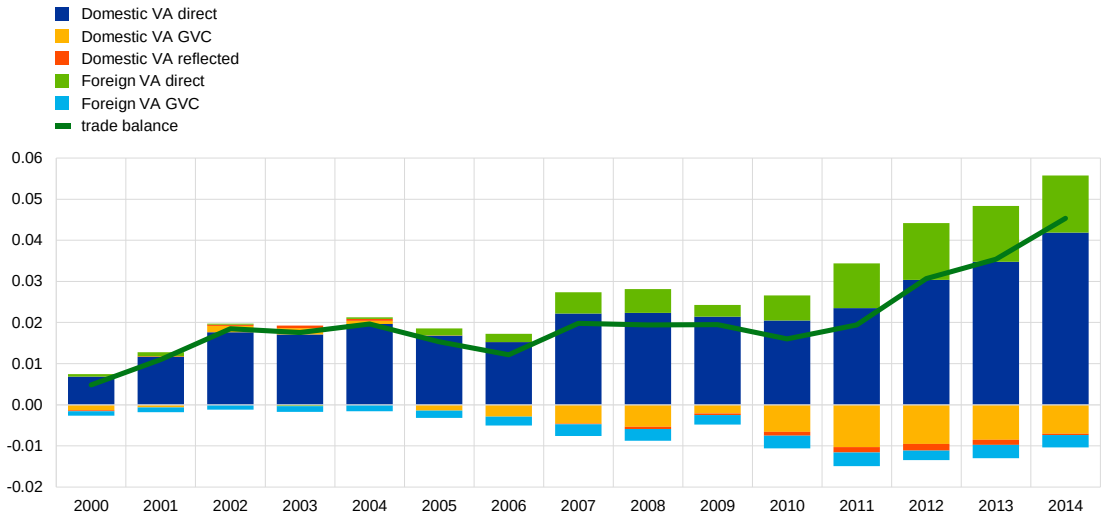


[60] The evidence presented in this box is based on the World Input-Output Database (WIOD) that employs b.o.p. statistics as an underlying source. The decomposition follows the methodology used in Borin, A. and Mancini, M., "Follow the value added: bilateral gross export accounting", *Temi di discussione (Economic working papers)*, No 1026, Bank of Italy, July 2015. The exercise focuses on four main components of the trade balance: i) the domestic value added absorbed by the direct importer (DVA direct); ii) the domestic value added exported and further re-exported as foreign value added in the GVC chain (DVA GVC); iii) foreign value added exported directly to the final consumer country (FVA direct); iv) foreign value added that is further exported by third countries in the GVC (FVA GVC), which only indirectly reaches the final absorbing economy. The trade balance of domestic value added exported abroad is a residual category, which is reflected and absorbed at home (DVA reflected).

Chart B

Trade balance in value added for other euro area economies

(as a share of GDP)



Source: WIOD data and authors' calculations.
Notes: Financial centres include the Netherlands, Belgium, Ireland, Luxembourg, Malta and Cyprus.

Financial centres also typically present large deficits in the balance of domestic value added that is further re-exported (DVA-GVC). This reflects the fact that financial centres tend to occupy the very last stage(s) in the production chain as they are located more downstream – i.e. they are closer to the final consumers – than any other participants in the global production network.

While domestic value added exported to final consumers (DVA-DIR) is the dominant component in the trade balance of other euro area economies, it is interesting to observe that the same component measures however more than twice the size in financial centres (see blue bars in Charts A and B). Financial centres' domestic contribution to the multi-stage production of goods and services is primarily in intangibles – the value of these is added at the very last stage and constitutes the difference between the final price and the factory price of a product.

If tax avoidance is one of the main factors shaping the trade balances in financial centres, then one should expect such balances to primarily reflect bilateral balances with higher tax, non-financial centres. Practices that manipulate trade prices mostly concern the bilateral trade relationships between financial and non-financial centres (i.e. low and higher taxation economies), thus resulting in selective trade surpluses. As a result, a more granular decomposition of the bilateral trade balances, expressed in terms of value added content, shows that financial centres hold large trade surpluses only in relation to higher taxation jurisdictions, especially euro area economies (whereas the positions in relation to other financial centres are more balanced).

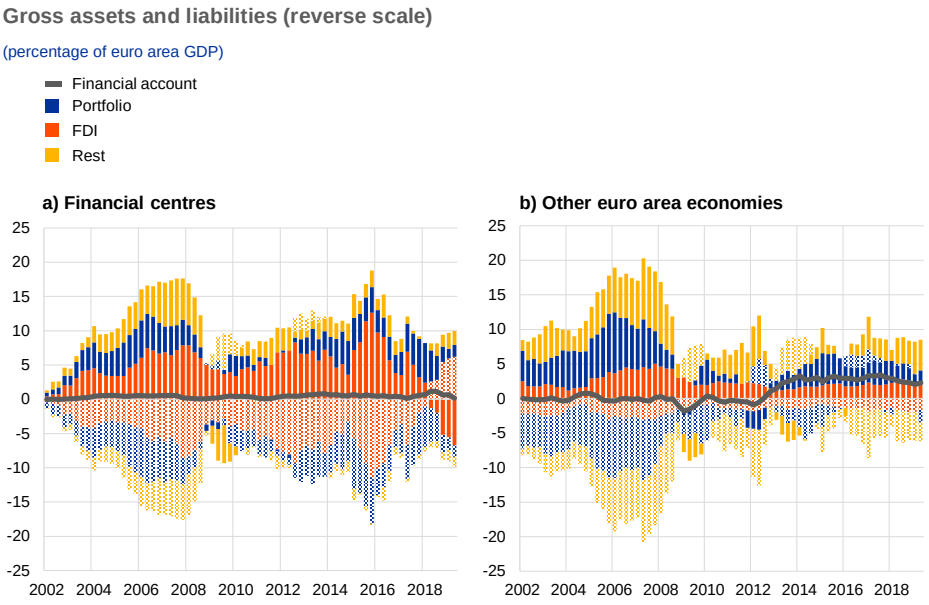
In conclusion, the dissection of the trade balance in value added shows that financial centres are also conduits for real transactions. A tiny fraction of their total trade is for their own domestic consumption, whereas a significant share of their trade responds to different objectives, including escaping profit taxation.

3.2 Euro area foreign direct investment

FDI is a very significant component of the euro area's financial account. In recent years it has gained prominence as a result of the striking expansion of gross transactions channelled by euro area financial centres (see Chart 5). The increase in gross FDI flows in turn reflects MNE activities, as discussed in this subsection.

The size of gross FDI flows going through financial centres is so large that they drive the aggregate developments of gross FDI in the euro area as a whole. FDI transiting through financial centres is, on average, between two and three times higher than that recorded by the other euro area economies. It is also three times more volatile. On a net basis, however, the FDI flows of the other euro area economies are more important in determining the aggregate net external position of the euro area (see Chart 5).

Chart 5
Financial account balances



Source: ECB and authors' calculations.
Note: Financial centres refer to Ireland, Belgium, Luxembourg, the Netherlands, Malta and Cyprus. Liabilities are reported in reverse scale on the negative values of the vertical axis and they are identified by the bars of the same colour as assets but in a lighter shade. The financial accounts of the two groups of countries are not netted out for intragroup flows. For the Netherlands data are available from 2003, for Malta from 2004, for Cyprus from 2008. Charts are based on quarterly data. The latest observations are for the second quarter of 2019.

As a result of MNE activity, gross FDI transactions in the euro area have become less stable and less predictable compared with when FDI mostly consisted of mergers and acquisitions and greenfield investment.[61] Furthermore, the volatility of gross FDI flows in the euro area, once considered a stable source of external financing, rose above that of other financial flows in the post-crisis period (see Chart 5). Conversely, over the same period the volatility of

[61] The coefficient of variation was computed separately based on groupings of countries (euro area financial centres and other euro area economies) for the pre-crisis and post-2009 periods. An increase could be identified only in the volatility of transactions of SPE affiliates resident in financial centres. This finding is not driven by one specific financial centre but it emerges as a common pattern of FDI in this group of economies.

gross FDI flows in the other euro area economies declined compared to pre-crisis values.

Another defining feature of FDI is the strong positive correlation between gross assets and liabilities, especially in financial centres. The very large degree of co-movement of FDI inflows and outflows is determined by capital passing through financial centres en route to other destinations (Chart 5).[62] Complex international investment schemes have been engineered to take advantage of favourable corporate tax and legal conditions; this makes financial centres highly interconnected while also allowing them to preserve their own business models.

The bulk of FDI transactions in financial centres are carried out by financial subsidiaries or holding companies of MNEs, including SPEs. In fact, other financial institutions' transactions (which include these entities) dominate the size and dynamics of FDI in financial centres, whereas NFCs drive gross asset and liabilities flows in the other euro area economies (see Chart 6). According to the dedicated IMF Task Force (see Box 2), SPEs are set up by MNEs specifically to access capital markets or sophisticated financial services; isolate owner(s) from financial risks; and/or reduce regulatory and tax burden; and/or safeguard confidentiality of their transactions and owner(s).[63] Euro area financial centres offer many of these advantages. In particular, they have developed sophisticated financial instruments, such as securitised products. The SPEs located in euro area financial centres typically hold MNE equities, manage corporate MNE debt-issuance, and allocate financing across parent and subsidiaries.[64]

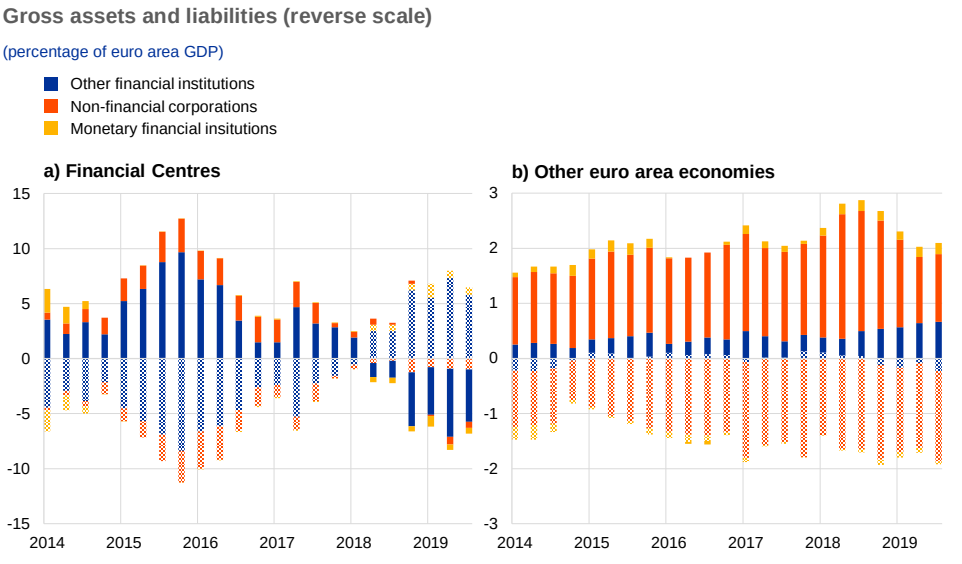
62 See Blanchard, O. and Acalin, J., "What Does Measured FDI Actually Measure?", *Peterson Institute for International Economics Policy Brief 16-17*, October 2016.

63 See "Final Report of the Task Force on Special Purpose Entities" IMF, 2018.

64 SPEs engineer different forms of corporate debt securitisations such as collateralised debt obligation where debt is backed by other assets compensating the investor for the risk of default or by high-yield bonds (collateralised bond obligations) or through credit default swaps where investors are compensated in case of debt default. See Hira, A., Gaillard, N., Cohn, T. H., *The failure of Financial Regulation: Why a Major Crisis Could Happen Again,* Palgrave, 2019.

Chart 6

Gross FDI flows in euro area financial centres vs. other economies in the euro area, by resident sector



Source: ECB and authors' calculations.
Notes: euro area financial centres refer to Ireland, Belgium, Luxembourg, the Netherlands, and Cyprus (Malta excluded due to data availability). Liabilities are reported in reverse scale on the negative values of the vertical axis and they are identified by the bars of the same colour as assets but in a lighter shade.

SPEs channel European and global capital around the world, also involving securitisation schemes. Some SPEs operate by pooling parent company debts and often transferring asset backed securities to a third subsidiary entity that is legally separate and possibly resident in another financial centre within or outside the euro area. This set of within-group financial transactions accounts for part of the earnings of SPEs and other subsidiaries in financial centres and represents another potential profit-shifting channel. Finally, to the extent that these securitisation schemes consist of within-group financial operations, neither the assets nor the risk underlying the securitised assets are shifted off the balance sheet consolidated at group level.

MNEs not only exert a significant impact on the size of gross FDI flows, but can also be a source of asymmetries in the measurement of bilateral external positions. These asymmetries are particularly pronounced for bilateral FDI income recorded in US and euro area b.o.p. (see Box 5).

Box 5

Euro area-US current account asymmetries: the role of foreign direct investment income in the presence of multinational enterprises

Prepared by Fausto Pastoris and Martin Schmitz

In the context of recent discussions on trade policies between the United States and its trading partners, bilateral current account balances have received growing attention from policy makers and

the media. However, the interpretability of bilateral current account statistics may be affected by the existence of bilateral asymmetries.[65]

In 2018 the euro area recorded a bilateral current account surplus of €131 billion vis-à-vis the United States, according to ECB data, while the euro area surplus amounted to only €40 billion in US Bureau of Economic Analysis (BEA) data (see panel (a) of Chart A).[66] The euro area surplus was around €90 billion smaller according to BEA data, due to a €23 billion smaller area goods surplus and larger euro area deficits for services and primary income (by €17 billion and €55 billion, respectively).[67] Panel (b) of Chart A reveals that the current account asymmetry has increased over time, largely due to the primary income balance, in particular in FDI.

The divergence in recording FDI income is particularly pronounced. In 2018 a paradoxical situation arose, in which both the euro area (according to ECB data) and the United States (according to BEA data) recorded positive income balances vis-à-vis each other (see panel (a) of Chart B). A large difference is observable for FDI income paid to US investors on their investments in the euro area, with the ECB recording a value around €85 billion lower than the corresponding figure reported by the BEA. In contrast, the income euro area residents earned on their FDI investment in the United States was relatively consistent in 2018 (diverging by around €18 billion).[68] The large discrepancy in FDI income paid by the euro area to the United States arises primarily from data on US FDI investment in the Netherlands, Luxembourg and Ireland.

65 Bilateral asymmetries arise when reported exports of "country A" to "country B" are not mirrored by the reported imports of "country B" from "country A".

66 For this analysis the data reported by the BEA were converted from US dollar to euro, using the average exchange rate over the respective time period.

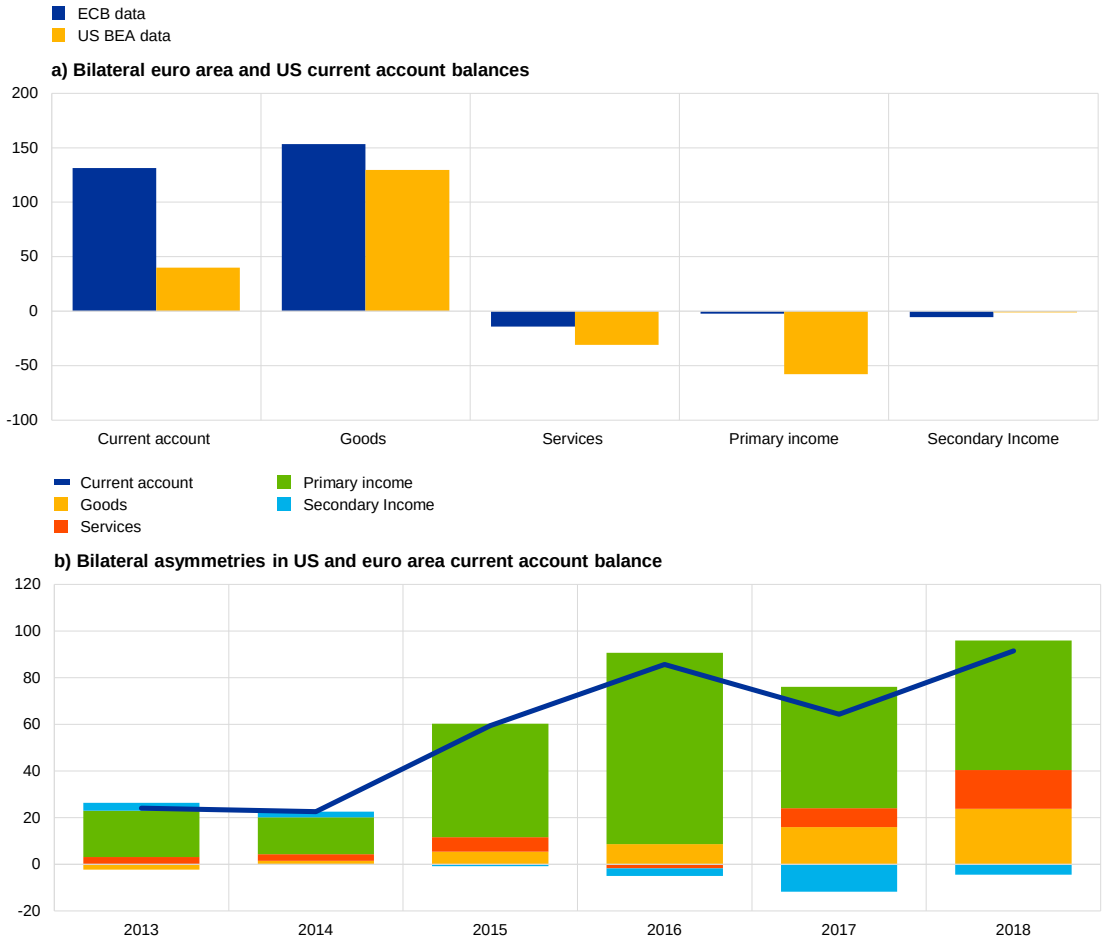
67 The euro area's secondary income deficit was €15 billion smaller according to BEA data, thereby slightly reducing the overall current account balance discrepancy.

68 Bilateral FDI income data from the BEA are recorded on a directional basis and thus organised according to whether the income derives from outward investment (US direct investment abroad) or inward investment (foreign direct investment in the United States). Bilateral FDI income data from the ECB are recorded on the basis of an asset/liability principle, classifying income as assets or liabilities. This difference in recording principles is not relevant for the income *balance*.

Chart A

Bilateral euro area-US current account balances

(panel (a): EUR billions; 2018; panel (b): EUR billions)

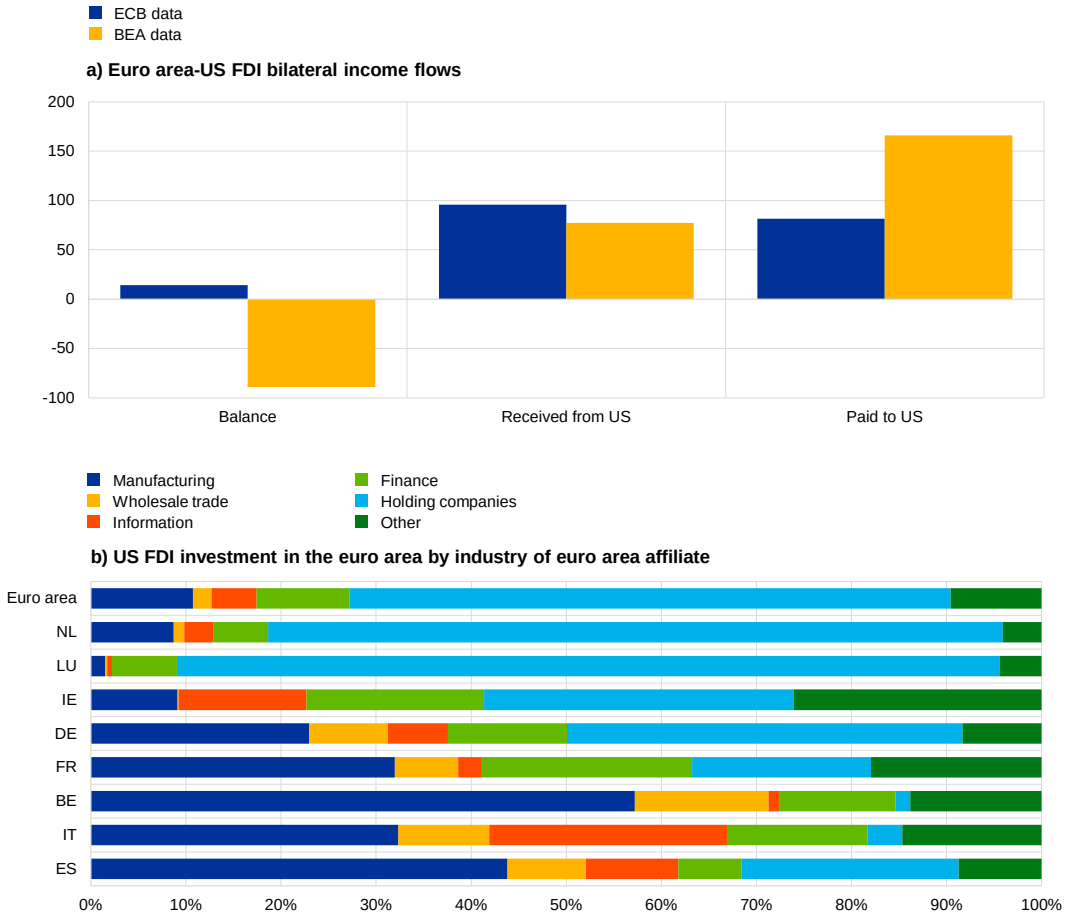


Source: ECB and BEA.
Notes: Bilateral asymmetries are calculated as ECB data minus mirror BEA data – a positive value indicates that the euro area balance reported by the ECB is larger than the corresponding figure reported by the BEA.

Chart B

FDI between the euro area and the United States

(panel (a): EUR billions; panel (b): proportion to the total; 2018)



Source: ECB and BEA.
Notes: Positive balance values indicate a surplus for the euro area in panel (a). "Other" includes mining, depository institutions, professional and technical services, other industries, and unallocated industries in panel (b). Euro area in panel (b) is based on BEA data available for Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain.

US MNEs often resort to complex chains of ownership – involving multiple FDI relationships in several euro area countries – which complicate the estimation of FDI income. According to BEA data (see panel (b) of Chart B), more than 60% of US FDI in the euro area is invested in holding companies, while only around 10% directly reaches euro area manufacturing entities. Holding companies – which are often SPEs – may serve as the first links between US MNEs and their euro area subsidiaries. Crucially, the income of these holding companies also includes the profits earned from other entities in MNE ownership chains (known as indirectly owned affiliates). [69] Recording such income – in particular for retained earnings – is challenging for statisticians because it requires comprehensive access to MNE balance sheets and their ownership links. Differences in the information available on US MNEs may partly explain why FDI income paid to US investors is lower in European statistics compared to US statistics.

[69] When a direct investment ownership chain with more than one hierarchical FDI link exists, direct investment earnings should reflect income from direct and indirect enterprises. Income earned along the chain of ownership needs to be recorded in the directly-owned direct investment enterprise.

Differences in the identification of the immediate counterpart country may also contribute to the observed asymmetries in FDI income. The complexity of MNE corporate structures makes it difficult for statisticians to attribute linkages to the correct counterpart countries. There is some evidence pointing to differences between the United States and the euro area, as euro area countries attribute sizeable parts of FDI income paid to immediate counterparts in offshore financial centres (in line with international statistical standards). Subsequently, these income flows are likely to be passed through to the United States. [70] The BEA may partly attribute such income as directly received from the euro area (rather than from offshore centres).

Several work streams are active between b.o.p. compilers, monitoring and analysing the observed asymmetries of euro area countries vis-à-vis the United States – in particular in the context of FDI income flows.

4 Conclusions

This article analysed how the operations of large multinational enterprises (MNEs) are affecting the external accounts of the euro area and, in general, financial centres. First, the article presented how MNE operations are recorded in cross-border statistics, as well as the related measurement challenges. Second, this article showed the impact of MNEs on the external accounts of the euro area, which is most evident in the current account balances and in foreign direct investment of euro area financial centres, often involving special-purpose entities. Third, financial centre economies generally report current account surpluses that may be attributed, in part, to the activity of MNEs.

Multilateral initiatives to improve the transparency of MNE operations are necessary to ensure exchanges of information across borders both for tax and statistical purposes. Such initiatives should help national authorities to take action against tax avoidance. Moreover, close international cooperation between statistical compilers – including sharing of potentially confidential information – would help to ensure consistent cross-border recording of MNE activities, thereby improving the quality and consistency of macroeconomic statistics. In particular, such initiatives could help to ensure clarity by disentangling the transactions conducted by SPEs in the context of FDI in the b.o.p.

[70] See for example explaining Ireland's FDI Asymmetry with the United States and Howell, K, et al., Current Account Asymmetries in EU-US Statistics, Eurostat and BEA, March 2019.

2 Short-term forecasting of euro area economic activity at the ECB

Prepared by Marta Bańbura and Lorena Saiz

1 Introduction

The real-time assessment of developments in economic activity is of central importance for the conduct of monetary policy. It facilitates the timely detection of changes in underlying economic dynamics in view of incoming data and contributes to a broader assessment of the economic outlook and associated risks. It is an integral part of the economic analysis in the European Central Bank's (ECB) two-pillar approach to the assessment of the risks to price stability. Moreover, given the time lags in the transmission of monetary policy measures, a timely and reliable evaluation of economic conditions is a key element in the assessment of the monetary policy stance.

Official estimates of real GDP growth in the euro area are published with some delay, but current and near-term developments in real GDP can be assessed on the basis of high-frequency and timely indicators. Real GDP is the key variable summarising information on real economic activity. However, it is available only at a quarterly frequency and its first official estimate for the euro area, the preliminary flash estimate, is published only approximately 30 days after the end of the reference quarter. To fill this gap, econometric models have been developed at the ECB and elsewhere that can exploit a rich set of data to produce a real-time estimate of real GDP in the current and next quarter(s). Short-term forecasts typically rely on financial market data, business and consumer surveys or sectoral data (e.g. from industry, retail or external sectors). These predictors are often available at a monthly, weekly or daily frequency and with shorter publication delays.

There are a number of challenges to building quantitative tools for short-term forecasting of economic activity. First, these tools need to combine information from data collected at different frequencies. Second, they need to deal with the "ragged edge" of the data, which is due to the fact that different types of data are characterised by different publication delays. For example, industrial production in the euro area is published around six weeks after the end of the reference month, whereas opinion surveys and financial market data are often already available at the end of the reference period. Third, as there are many indicators that may be useful, the econometric approaches should be able to reliably estimate many parameters. Fourth, many indicators are subsequently revised and thus their first release might incorporate sizeable noise or measurement error. Fifth, data can be contaminated by outliers, caused by unusual events (e.g. strikes, atypical weather conditions), or changes in statistical properties over time, due to methodological or structural economic changes.

Further challenges for real-time forecasting became apparent in the course of the global financial crisis and in its aftermath. The vast majority of models, including those used at the ECB for short-term forecasting at the time[71], failed to

[71] See "Short-term forecasts of economic activity in the euro area", *Monthly Bulletin,* ECB, April 2008.

predict the timing and depth of the Great Recession. In addition, these models systematically over-predicted the strength of the subsequent recovery. Several reasons were put forward at the time as an explanation for this disappointing forecast performance, including changes in structural relationships between economic variables, extreme outcomes in certain indicators that were inconsistent with model assumptions, insufficient coverage of financial market data and a non-linearity in the relationship between the real economy and the financial sector. Apart from addressing these shortcomings, recommendations for modellers included developing better tools for risk assessment and establishing appropriate economic narratives.[72]

The suite of models for short-term forecasting of euro area real GDP growth currently used at the ECB is the result of a comprehensive review conducted in 2015. The models rely on a medium-size data set of approximately 30 monthly indicators. A multivariate econometric set-up and a relatively broad coverage of various aspects of the euro area economy provide a framework for the interpretation of incoming data and forecast revisions. The forecasts are prepared using automated procedures (i.e. they are judgement-free) and can be produced in a matter of minutes. In addition to point forecasts, the model suite can also produce predictive distributions (fan charts). The latter can be used to assess, in real time, the degree of uncertainty around, or the risks to, the prevailing outlook for the short term.

The model-based short-term forecasts of real GDP are an important input to the Eurosystem/ECB staff macroeconomic projections.[73] By delivering quantitative estimates of real GDP growth ahead of the official data release and by providing an assessment of the macroeconomic "news" since the completion of the previous projection round, they are a useful starting point for updating the baseline short-term outlook for GDP growth. In addition, the predictive distributions provide model-based input for assessing the balance of risks surrounding the staff GDP projections.

The article is organised as follows. Section 2 explains the methodological framework of the suite of models for short-term forecasting of real GDP at the ECB. Section 3 presents an evaluation of the forecast performance of the models. Section 4 focuses on two interesting elements of the suite of models: news analysis and predictive distributions. Finally, Section 5 concludes with the main lessons learned and discusses the current challenges, further planned enhancements and new directions of work.

2 Methodological framework

Several types of models for short-term forecasting of real GDP have been proposed in the literature, including bridge equations, mixed-frequency dynamic factor models, mixed-frequency vector autoregressions and Mixed Data Sampling (MIDAS) models. Traditionally, "bridge equations", linking GDP to a few key monthly indicators aggregated to a quarterly frequency, have been used. The latter are forecast using simple "auxiliary" models to complete the missing

[72] See, for example, Kenny, G. and Morgan, J., "Some lessons from the financial crisis for the economic analysis", *Occasional Paper Series*, No 130, ECB, 2011.

[73] See "A guide to the Eurosystem/ECB staff macroeconomic projection exercises", ECB, July 2016.

observations for the quarter. More recent approaches include mixed-frequency dynamic factor models and mixed-frequency vector autoregressions, which allow a single modelling framework to be used for the entire information set. Finally, MIDAS models allow data of different frequencies to be combined in a regression set-up by imposing a parsimonious lag structure. Different model types offer different advantages, in particular as regards robustness to structural breaks and extreme data outcomes or the possibility to interpret forecast revisions.[74]

The 2015 review of the ECB's short-term forecasting models was motivated by the deterioration in the (relative) performance of the models in the course of the global financial crisis and in its aftermath. The suite of models used at the time encompassed (several versions) of bridge equations and large-scale mixed-frequency dynamic factor models. Both model types exhibited large forecast errors during the crisis and a positive bias (systematic over-prediction) thereafter, but the problems were more acute for the factor models. One of the reasons behind the positive bias was the insufficient coverage of the services sector and a declining contribution of the industry sector to value added in the euro area. Another reason was the difficulty to reliably estimate relationships between a large set of variables in view of their different behaviour during the financial crisis (in particular for survey vs. "hard"[75] data). The forecast performance of the mixed-frequency factor models appears to have been more sensitive to such structural changes compared with the performance of the bridge equations.

The current suite of short-term forecast models is based on bridge equations, in view of their comparatively better post-financial crisis forecast performance. Two types of bridge equations are included: (i) equations based on "hard" data, linking GDP to industrial production (excluding construction) and value added in services, and (ii) equations based on "soft" data, linking GDP to Purchasing Managers' Index (PMI) composite output and PMI construction.[76] Both types embody the "supply" perspective for real GDP measurement[77], given that the coverage of information is more complete and timelier and the relationship with GDP is more stable compared with the "demand" perspective. As a consequence, the supply perspective results in more accurate forecasts. The forecasts for (quarterly) value added in services are obtained via an auxiliary bridge equation.

The monthly predictors included in the bridge equations are in turn forecast using "auxiliary" models and incorporate information from other monthly variables. Since bridge equations typically include just a few predictors, the only way to exploit a larger (and timelier) set of information in such a framework is through monthly

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74 See Bańbura, M., Giannone, D., Modugno, M. and Reichlin, L., "Now-casting and the real-time data flow", in Elliott, G. and Timmermann, A. (ed.), *Handbook of Economic Forecasting*, Vol. 2A, North Holland, 2013, pp. 195–236, for a detailed review and list of references for the different modelling approaches.

75 "Soft" is typically used to label indicators that reflect market expectations, most notably surveys and financial market data. By contrast, "hard" indicators often measure certain GDP components directly (e.g. industrial production).

76 See de Bondt, G.J., "A PMI-based Real GDP Tracker for the Euro Area", *Journal of Business Cycle Research,* Vol. 15, Issue 2, 2019, pp. 147–170.

77 See Hahn, E. and Skudelny, F., "Early estimates of euro area real GDP growth – a bottom-up approach from the production side", *Working Paper Series,* No 975, ECB, December 2008.

auxiliary models to produce forecasts of the predictors.[78] The auxiliary models for the bridge equations are monthly Bayesian vector autoregressions and dynamic factor models. Both types of models allow a large number of variables to be incorporated.

The data set comprises approximately 30 indicators. It includes industrial production and business surveys for different sectors, monthly indicators of retail trade, unemployment, external trade and financial market data. The data set can be considered a "medium" size and is significantly smaller than those underlying the mixed-frequency factor models used previously. Forecast evaluations conducted during the review have shown that a very granular sectoral disaggregation typical for large data sets does not result in improved forecast accuracy.[79]

Forecasts are obtained as an average of forecasts produced by individual models. Combining two types of bridge equations with five auxiliary models results in ten distinct models for GDP. For point forecasts, an average of the individual model predictions is taken. Pooling individual forecasts leads to gains in forecast accuracy, even with respect to the best-performing model version[80], see below. Predictive distributions (densities) are produced via simulations and combined predictive density is calculated as an average of the individual model predictive densities. More technical details can be found in Box 1.

Box 1

The suite of models for short-term forecasting of real GDP in the euro area: some technical details

The models used belong to the family of bridge equations. A bridge equation is a linear regression model where the dependent variable is the low-frequency variable of interest (e.g. quarterly GDP) and the regressors are higher-frequency predictors (e.g. monthly industrial production) aggregated to the lower frequency. In the case of the models for short-term forecasting of real GDP in the euro area described in the main text, the equations are specified as follows:

$$y_t^Q = \alpha + \sum_{i=1}^{k} \beta_i X_{i,t}^Q + \varepsilon_t^Q,$$

where y_t^Q is the dependent variable, in this case quarter-on-quarter real GDP growth, and $X_{i,t}^Q$ are the predictor variables (up to k per bridge equation). Two types of bridge equations are included. In the first bridge equation, the predictor variables are: quarterly growth of industrial production and quarterly growth of value added in services. In the second equation, the predictors are: quarterly average of PMI composite output and quarterly difference of PMI construction output[81]. ε_t^Q is the

78 See Bulligan, G., Golinelli, R. and Parigi, G., "Forecasting monthly industrial production in real-time: from single equations to factor-based models", *Empirical Economics*, Vol. 39, Issue 2, 2010, pp. 303-336.

79 This is in line with the conclusions in, for example, Bańbura, M., Giannone, D. and Reichlin, L., "Large Bayesian vector autoregressions", *Journal of Applied Econometrics*, Vol. 25, Issue 1, 2010, pp. 71–92, and Bańbura, M., Giannone, D. and Reichlin, L., "Nowcasting", in Clements, M.P. and Hendry, D.F. (ed.), *The Oxford Handbook of Economic Forecasting*, 2011.

80 See Kuzin, V., Marcellino, M. and Schumacher, C., "Pooling versus model selection for nowcasting GDP with many predictors: empirical evidence for six industrialized countries", *Journal of Applied Econometrics*, Vol. 28, Issue 3, 2013, pp. 392-411.

81 See, for example, de Bondt, G.J., op. cit., for more details on the second equation. Note that the two equations result in better forecast accuracy than an average of (a large number of) single variable bridge equations.

regression residual, α is the intercept and β_i are the regression coefficients. For value added in services, an auxiliary bridge equation including expected demand for services from the surveys of the European Commission is used. The equations are estimated by standard regression techniques (ordinary least squares). The estimation sample starts in 1985 or later, depending on data availability in the particular equation (or "auxiliary" model, see below).

In order to obtain forecasts for GDP from the equations described above, it is necessary to obtain forecasts for the monthly predictors for the quarters of interest. For this purpose, "auxiliary" multivariate models at a monthly frequency are used: vector autoregressions (VARs) and dynamic factor models (DFMs).[82] The former are estimated with Bayesian methods, using a specification in first differences with six lags and the Minnesota prior with the degree of shrinkage dependent on the size of the model.[83] The latter are estimated by maximum likelihood, using the expectation maximisation algorithm.[84] The specification includes one single common factor, which follows an autoregressive process of order two and an autoregressive process of order one for the idiosyncratic components. Both types of models can deal with large sets of variables. VARs of three sizes (including two, 22 or 28 variables) and DFMs of two sizes (with 22 and 28 variables) are included. In order to handle the ragged edge caused by different publication delays of the variables, the models are cast into a state space representation and the Kalman filter and smoother are used to obtain the forecasts of the monthly variables and the weights for the news (see Section 4).

The variables for the bridge equations and the monthly "auxiliary" models were selected on the basis of several criteria including correlation analysis, in-sample and out-of-sample forecast performance, stability and significance of regression coefficients as well as shrinkage methods such as LASSO regressions.[85] The results confirmed previous findings in the literature that a very high level of disaggregation (100 series or more) is not needed to achieve the best forecast accuracy.

The computation of the models' predictive distributions (densities) relies on the use of the Gibbs sampler and the simulation smoother (in order to handle the ragged edge).[86] The density forecasts from individual models are combined by a linear opinion pool with equal weights attached to individual densities. Combinations of normal densities produce distributions which can accommodate non-standard features such as fat tails or skewness. As for the case of point forecasts, pooling density forecasts is also an insurance policy against uncertainty in model selection.[87]

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82 This results in higher forecast accuracy compared with using a univariate ARIMA model for each monthly predictor, in line with the findings in Rünstler, G. and Sédillot, F., "Short-term estimates of euro area real GDP by means of monthly data", *Working Paper Series*, No 276, ECB, September 2003.

83 See Bańbura et al., "Large Bayesian vector autoregressions", op. cit.

84 See Bańbura, M. and Modugno, M., "Maximum likelihood estimation of dynamic factor models on datasets with arbitrary pattern of missing data", *Journal of Applied Econometrics*, Vol. 29, Issue 1, 2014, pp. 133–160.

85 Note that the selection of indicators was not conducted in real time but in sample. However, as the data set was frozen at the beginning of 2015, the evaluation starting in 2015 is truly real-time. LASSO and similar techniques have been used to select variables for bridge equations in, for example, Bulligan, G., Marcellino, M. and Venditti, F., "Forecasting economic activity with targeted predictors", *International Journal of Forecasting*, Vol. 31, Issue 1, 2015, pp. 188-206.

86 See Durbin, J. and Koopman, S.J., "A simple and efficient simulation smoother for state space time series analysis", *Biometrika*, Vol. 89, Issue 3, 2002, pp. 603–615.

87 Geweke and Amisano showed that pooled forecast densities produce superior predictions, even if the set of models to be combined exclude the "true" model. See Geweke, J. and Amisano, G., "Optimal prediction pools", *Journal of Econometrics*, Vol. 164, Issue 1, 2011, pp. 130-141.

3 Forecast performance

A real-time evaluation is conducted of the forecasting accuracy of the models since their introduction and over a longer period starting in 2005. For this purpose, real-time data vintages going back to 2005 are constructed based on the information stored in the ECB's Statistical Data Warehouse (SDW).[88] For each quarter in the evaluation sample, 12 forecast horizons are considered. The first forecast is obtained five months ahead of the first official publication. Subsequent forecasts are produced in semi-monthly intervals, up to two weeks before the publication of the preliminary flash estimate.[89] For instance, in the forecast cycle for the second quarter of the year, the first forecast would be produced at the end of January and the last one in the second week of July. The evaluation focuses on the bias and the root mean squared error of the forecasts. The forecasts are evaluated against the official flash estimates and the latest available vintage of quarter-on-quarter real GDP growth.

The forecast accuracy of the models is compared with that of the Eurosystem/ECB staff macroeconomic projections. For the purpose of the evaluation, a convention is adopted in line with which the latter are finalised in the middle of the second month of each quarter (corresponding to the forecast horizon of 1.5 and 4.5 months ahead for the current and the next quarter, respectively) and they remain unchanged in between.[90]

The accuracy of the models improves as new information arrives and the models fare relatively well compared with the Eurosystem/ECB staff macroeconomic projections. Chart 1 shows the root mean squared forecast error (RMSFE) and the bias for the model forecasts (light-coloured lines) as well as the projections (dark-coloured lines) compared with the official flash estimate (red lines) and with the latest vintage (blue lines) of GDP growth for the 12 forecast horizons considered. The evaluation period is 2015Q1 to 2019Q2.[91] Overall, the accuracy of the model forecasts is somewhat lower than that of the projections. The precision of the model forecasts gradually improves with a decreasing forecast horizon and the forecasts appear particularly useful at very short horizons after the projections have been finalised. Both the forecasts and the projections are more accurate and less biased when they are compared with the flash estimate than when they are compared with the latest available vintage of GDP.

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88 For a given date stamp and indicator identifier, a time series available at that date can be recovered from the SDW. Thus real-time data vintages reflect both publication delays and data revisions (as opposed to pseudo real-time vintages that reflect only the former).

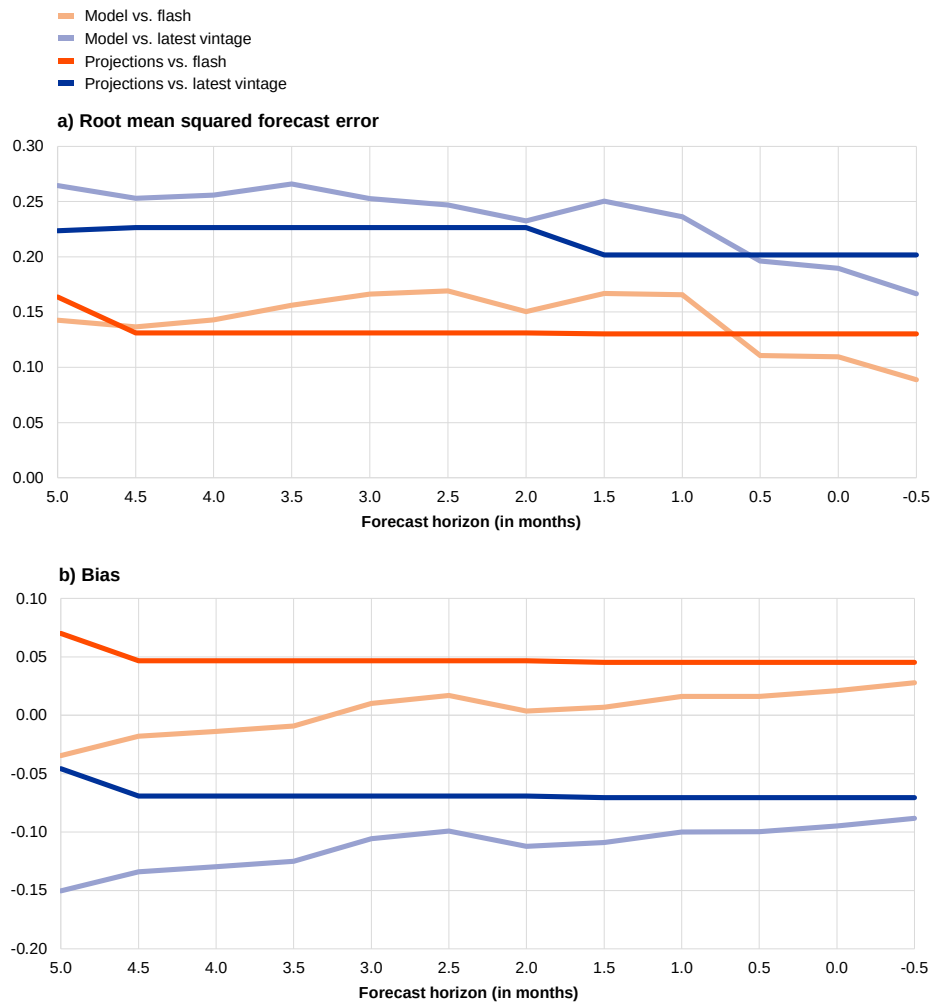
89 This reflects the frequency and the forecast horizon of the regular updates of short-term forecasts at the ECB. They are generally conducted twice per month, following the release of industrial production in the middle of each month, and of opinion surveys at the end of each month. The forecasts are always reported for the next two quarters to be published.

90 As a consequence, the accuracy of the projections reported in Chart 1 changes in the middle of the second month of each quarter as a new projection becomes available. The projections are customarily finalised between the middle and the end of the second month of each quarter.

91 Since no changes have been implemented to the models since 2015, this is a truly real-time out-of-sample evaluation.

Chart 1

Accuracy of model GDP forecasts and Eurosystem/ECB staff GDP projections over 2015Q1-2019Q2



Source: ECB calculations.
Notes: For each quarter a sequence of 12 real-time forecast updates is evaluated. The forecast horizon (indicated on the horizontal axis) is defined as the distance (in months) between the end of the reference quarter and the date when the forecast was made. A convention is adopted in line with which Eurosystem/ECB staff macroeconomic projections are finalised around the middle of the second month of each quarter (1.5 or 4.5 months before the end of the reference quarter). Bias is defined as the average difference between the forecast and the outcome. Model forecasts and the projections are evaluated against the official flash estimate of GDP growth (released in the middle of the second month of the following quarter) as well as against the latest available vintage of real GDP growth.

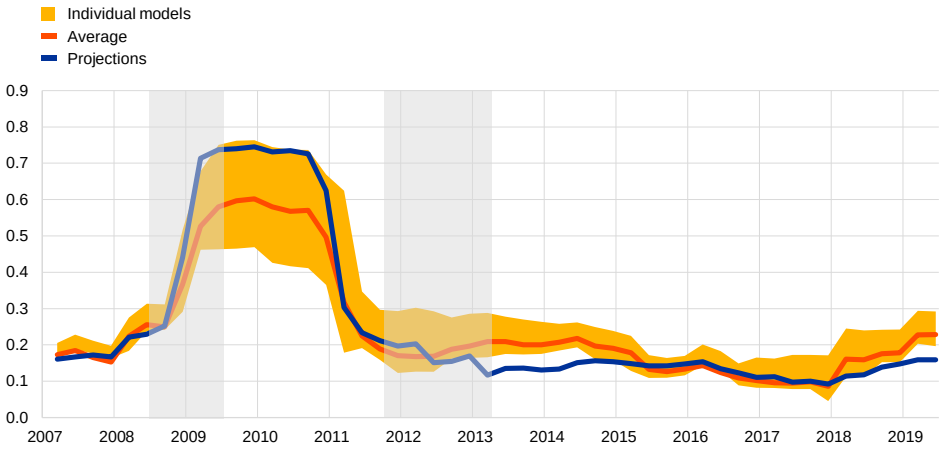
The models also perform relatively well when evaluated over a longer period.

The evaluation period considered above is relatively short and less volatile than, for example, the preceding period, which included the financial and sovereign debt crises. Focusing on the RMSFEs for 1.5-month ahead horizon with the flash estimate as the reference variable, Chart 2 presents the evolution of forecast accuracy since 2005 over an eight-quarter window. Several observations can be made. First, unsurprisingly, the financial crisis period was characterised by much larger forecast errors, both for models and for the Eurosystem/ECB staff macroeconomic projections. By contrast, the errors were not particularly large during the sovereign debt crisis. Second, the average model forecast is more accurate than the projections in some

periods (notably during the financial crisis but not in the latest period).[92] Finally, an average of forecasts from several models typically does as well as the best model in each month (which changes over time) and is thus a good hedge against model uncertainty.

Chart 2
Evolution of forecast accuracy since 2005

(percentage points, RMSFE over an eight-quarter rolling window)



Source: ECB calculations.
Notes: The chart shows the RMSFEs over a rolling window of eight quarters. The forecasts are updated in the middle of the second month of the reference quarter (forecast horizon of 1.5 months), around the finalisation date of the Eurosystem/ECB staff macroeconomic projections. The reference variable is the official flash estimate of quarter-on-quarter real GDP growth. 'Average' refers to the rolling RMSFE of the average point forecasts (from ten different models). 'Individual models' indicates the range given by the minimum and maximum (rolling) RMSFE of the individual models. Shaded areas indicate recession periods (the Great Recession and the sovereign debt crisis) in the euro area as identified by the CEPR Business Cycle Dating Committee.

4 News analysis and a measure of risks

4.1 News analysis

The current framework allows linking revisions to the GDP growth forecast to model-based surprises or news content in releases of monthly predictors. This is also known as model-based news analysis and is an important element of data monitoring. The news (or surprise) for each indicator is defined as the difference between the released value of that indicator and its expected (forecast) value, i.e. the forecast error made by the model. The difference between two consecutive forecasts of GDP, that is the forecast revision, can be expressed as a weighted average of the news in the data released between the two forecast updates (plus the effect of historical data revisions and parameter re-estimation).[93] The weights reflect the

[92] It should be noted that although the estimation of and the forecasts from the models are performed using real-time data, the specification and the choice of the variables in the new models were performed after the crisis and therefore have the benefit of hindsight for the evaluation period prior to 2015.

[93] See Bańbura et al., "Now-casting and the real-time data flow", op. cit. For a meaningful analysis, the news should be based on multivariate models, incorporating most relevant indicators and taking into account differences in their timeliness and strength of the signal. The news analysed here is model-based and conceptually similar but not the same as "market surprises" (which are the differences with respect to market expectations).

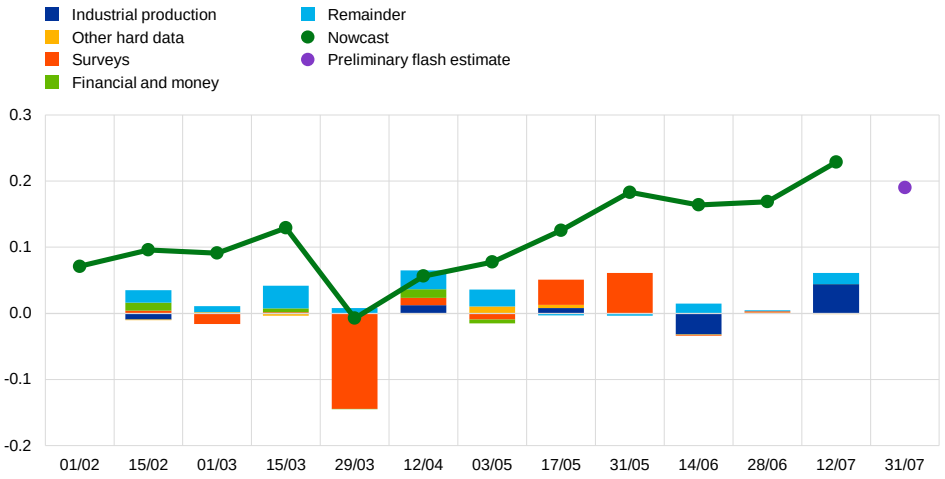
average volatility of the news and its relevance for GDP. The sign of the news indicates whether the released number was better or worse than expected ("positive" or "negative" news).

Forecast revisions for individual quarters can be decomposed to identify the role of specific (groups of) indicators. Chart 3 illustrates this type of analysis taking the second quarter of 2019 as an example. The green line represents the evolution of the (average point) forecasts starting at the beginning of February up to mid-July, approximately two weeks before the release of the preliminary flash estimate of real GDP for that quarter. The bars indicate the model-based news or drivers of forecast revisions between the consecutive updates. A sizeable downgrade of the outlook at the end of March can be seen due to negative news in survey data. Subsequently, positive surprises on survey data lead to an upward revision of the outlook. From the end of May, the nowcast stabilises close to the outcome (preliminary flash estimate).

Chart 3

Model-based news and revisions to real GDP growth forecast for 2019Q2

(quarterly percentage changes and percentage point contributions)



Source: ECB calculations.
Notes: The green line represents the average point forecasts (from ten different models) for real GDP growth in 2019Q2 from different forecast updates (indicated on the horizontal axis). The bars indicate the decomposition of forecast revisions between the consecutive updates into news stemming from different groups of data: 'Industrial production' – sectoral production indicators, 'Other hard data' – unemployment rate, external trade, retail trade, new car registrations, 'Surveys' – surveys of the European Commission and the Purchasing Managers' surveys, 'Financial and money' – real money and financial and credit indicators. 'Remainder' collects the effects of data revisions and parameter re-estimation.

4.2 Density forecasts

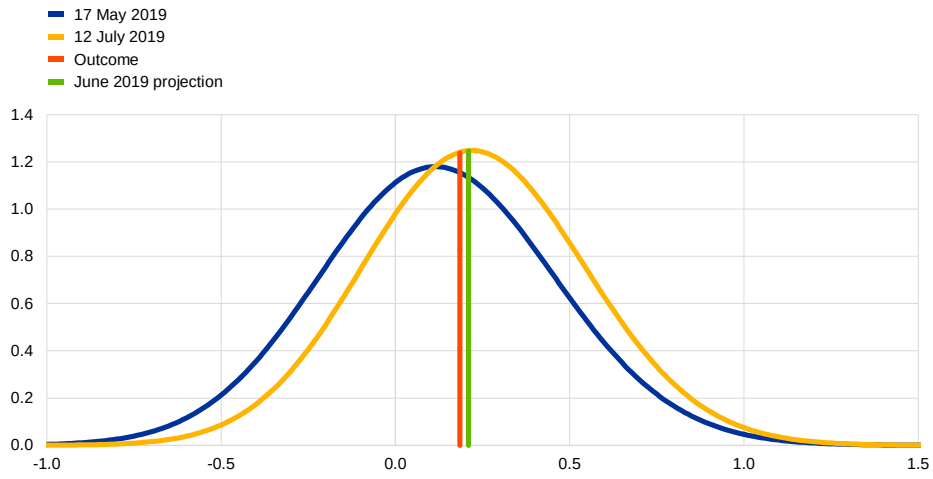
The location and the shape of the models' predictive distributions make it possible to assess the uncertainty around the point forecast as well as the direction and the degree of risks to forecasts from other sources such as the staff projections. For example, when the centre of the model predictive density (as represented by its mode or its median) is to the left of an alternative forecast, it signals downward risks to the latter and vice versa. Consequently, movements to the left or right of the predictive density will imply changes in the assessment of the direction of risks. By contrast, changes in the shape of the distribution (i.e. dispersion or concentration) will imply changes in the level of uncertainty. In real-time analysis, as

more information is accrued over the forecast cycle, the predictive distribution usually becomes more concentrated, entailing less uncertainty surrounding the central forecast. It cannot be ruled out, however, that the release of one or several indicators could lead to a flatter distribution, due to diverging interpretations by the different models, and therefore to higher uncertainty.

As an example, predictive distributions indicate that, on the basis of these models, initially there were downward risks to the June 2019 Eurosystem staff GDP projection for 2019Q2 and the balance of risks became more neutral as more data became available. Chart 4 presents the models' predictive densities for 2019Q2 obtained with the data available on 17 May 2019 (around the finalisation of the June 2019 staff projection) and on 12 July 2019. Initially, the models suggested downside risks to the projection since the probability of a lower outcome was higher than 50% (i.e. 60%). As more information became available by mid-July, the distribution moved to the right and became more concentrated. This means that the risks to the projection became more balanced (given that the probability of observing an outcome either above or below the projected value was around 50%) and smaller.

Chart 4

Predictive densities for real GDP growth in 2019Q2



Source: ECB calculations.
Notes: The blue and yellow lines represent the (combined) predictive densities for real GDP growth from the respective forecast updates. The combination involves densities from the ten different models via a linear prediction pool with equal weights. The green line corresponds to the outlook in the June 2019 Eurosystem staff macroeconomic projections, and the red line is the preliminary flash estimate.

5 Conclusions and new directions

Changes in economic relationships caused by the evolving economic environment are a challenge to forecasting models in general and to short-term forecasting tools in particular. Some notable examples of structural changes include climate change, inter-sectoral re-balancing, developments in productivity, effects of severe recessions and, more specifically for the euro area, changes in the automotive industry.

Several lessons on how to address those and other challenges can be drawn from the experience with model-based short-term forecasting of real economic activity at the ECB. First, it is important to have several models in the toolbox and to assess their performance regularly, as it may deteriorate over time. Second, a combination of forecasts from different models typically helps to make the forecast performance more robust to misspecification. Third, including information on all major sectors of the economy is important but it is not necessary to use data sets at a very high level of disaggregation. A medium-size set of relevant and timely indicators appears to be sufficient to capture the information on real activity developments in the near term. Finally, it is important to be able to interpret the revisions to the outlook and to communicate uncertainty surrounding the forecasts. Still, scope for further improvement along several dimensions remains.

One issue is the high reliance of short-term forecasting models on survey data. Surveys provide qualitative information (i.e. opinions or perceptions) from relatively small samples of firms or consumers. They are very relevant due to their short publication lag. However, their relationship with quantitative (hard) indicators can change over time, reflecting either sampling biases (e.g. survival bias, especially after the crisis) or the fact that survey respondents can change the benchmarks used for their assessments (e.g. value of sales growth which can be considered an improvement in the firm's performance).[94] As a result, the mapping of survey data levels into economic growth rates is not straightforward. For instance, at the beginning of 2018 survey data were at historically high levels[95], while real GDP growth slowed down considerably in the euro area. Conversely, some of the surveys painted a rather bleak outlook for 2019, while hard data turned out somewhat more resilient.

Alternative models and indicators can be employed to further enhance the accuracy and robustness of the models currently employed. Examples include time-varying parameter models that can deal with relationships that change over time in a flexible way.[96] The usefulness of alternative indicators and methods is also being investigated, in particular of machine learning algorithms and "big data". The term "big data" is rather broad. In this context, it includes large and near-real-time data from the internet (e.g. internet search volumes[97], data from social networks such as Twitter and Facebook, newspaper articles) or large-volume data from non-official sources (e.g. from trading platforms and payment systems). Big data allows a wider range of indicators to be used, which can provide new and unique insights helpful for forecasting. For instance, text-based sentiment indicators could be particularly useful given that they can be produced automatically at a high frequency and at lower costs than survey-based sentiment indicators, and they can be based on large samples of

94 See Gayer C. and Marc B., "A 'New Modesty'? Level Shifts in Survey Data and the Decreasing Trend of 'Normal' Growth", *European Economy Discussion Paper,* 083, European Commission, July 2018.

95 See the box entitled "The recent strength of survey-based indicators: what does it tell us about the depth and breadth of real GDP growth?", *Economic Bulletin*, Issue 8, ECB, 2017.

96 See, for example, Antolín-Díaz, J., Drechsel, T. and Petrella, I., "Tracking the Slowdown in Long-Run GDP Growth", *The Review of Economics and Statistics*, Vol. 99, Issue 2, 2017, pp. 343–356.

97 See, for example, Ferrara, L. and Simoni, A., "When are Google data useful to nowcast GDP? An approach via pre-selection and shrinkage", *Working Papers,* No 2019-04, Center for Research in Economics and Statistics, 2019.

newspapers to avoid biases.[98] At the same time, one has to keep in mind that considering a large set of explanatory variables entails risks of overfitting, not necessarily leading to improvements in out-of-sample forecast accuracy. Some of these challenges can be addressed by machine learning algorithms, which also have the advantage of potentially capturing complex non-linear relationships. These are some interesting directions for future work.

[98] See, for example, Thorsrud, L.A., "Words are the New Numbers: A Newsy Coincident Index of the Business Cycle", *Journal of Business & Economic Statistics*, 2018.

3 The state of play regarding the deepening agenda for Economic and Monetary Union

Prepared by Sander Tordoir, Jacopo Carmassi, Sebastian Hauptmeier and Malte Jahning[99]

This article provides an overview of progress with various aspects of the deepening of Economic and Monetary Union (EMU). The start of a new legislative period for the European Union (2019-24) provides a natural and opportune moment to take stock of progress towards completion of the architecture of EMU.

The EU's last two legislative periods saw significant progress as regards the architecture of EMU in response to the global financial crisis more than a decade ago. A banking union was established, with shared supervision of Europe's largest banks at supranational level and a common framework for addressing and resolving ailing banks. The European Stability Mechanism (ESM) was put in place to support euro area countries facing deep economic crises. And a number of adjustments were made to the shared rules governing national fiscal and economic policies.

However, there is no room for complacency: EMU needs to become even more resilient to adverse economic shocks. An increase in private risk sharing (whereby firms and households diversify their assets across borders through integrated capital and banking markets) can help to mitigate local recessions by allowing local shocks to be offset using income received from elsewhere. An increase in public risk sharing (e.g. through some form of common fiscal policy or shared backstops that safeguard financial stability in times of crisis) can also help to attenuate local and even euro area-wide recessions. Such private and public risk sharing are still more limited in the euro area than they are in other monetary unions, such as the United States. At the same time, the governance mechanisms that help to ensure resilient policies at national level and seek to prevent harmful spillover effects between euro area countries could be strengthened further.

Concrete decisions and further work on a number of aspects of EMU are scheduled for the near future. This includes work on the banking union and the capital markets union (CMU), both of which remain incomplete, leaving scope to further increase the stability and integration of Europe's banking and capital markets. Other initiatives include reform of the ESM as part of work in the area of crisis management, as well as the establishment of a budgetary instrument for convergence and competitiveness (BICC), which aims to help euro area countries to invest and implement reforms with a view to improving the structure of their economies. In addition, the European Commission is also reviewing the fiscal and economic governance framework that coordinates national policies and is set to table a proposal for a European unemployment reinsurance scheme as a way of enhancing the euro area's ability to withstand economic downturns.

99. Valuable contributions were also made by Giovanni Di Iasio, Joachim Eule, Donata Faccia, Alessandro Giovannini, Anastasia Koutsomanoli-Filippaki, Rebecca Segall, Pär Torstensson and David Sondermann.

The ECB has a clear interest in increasing the resilience of the euro area's institutional architecture. Sound countercyclical fiscal policies, sufficient financial resilience and cross-border private and public risk sharing are all important to the ECB in order to allow for more effective transmission of monetary policy with fewer side effects, enhance the alignment of euro area business cycles, complement monetary policy and give European banking supervision greater traction.

Against that backdrop, this article provides an overview of various different elements of the deepening agenda for EMU and identifies a number of outstanding issues.

1 Introduction

Completing the institutional architecture of EMU will be an important challenge for the EU during the 2019-24 legislative period. A new European Parliament was elected in May 2019, and the new Commission President, Ursula von der Leyen, outlined her priorities in July 2019, before taking office on 1 December 2019 alongside the new College of Commissioners. Meanwhile, the EU's heads of state or government set out ten priorities for the European Union for the period 2019-24 in a declaration in Sibiu on 9 May 2019.[100]

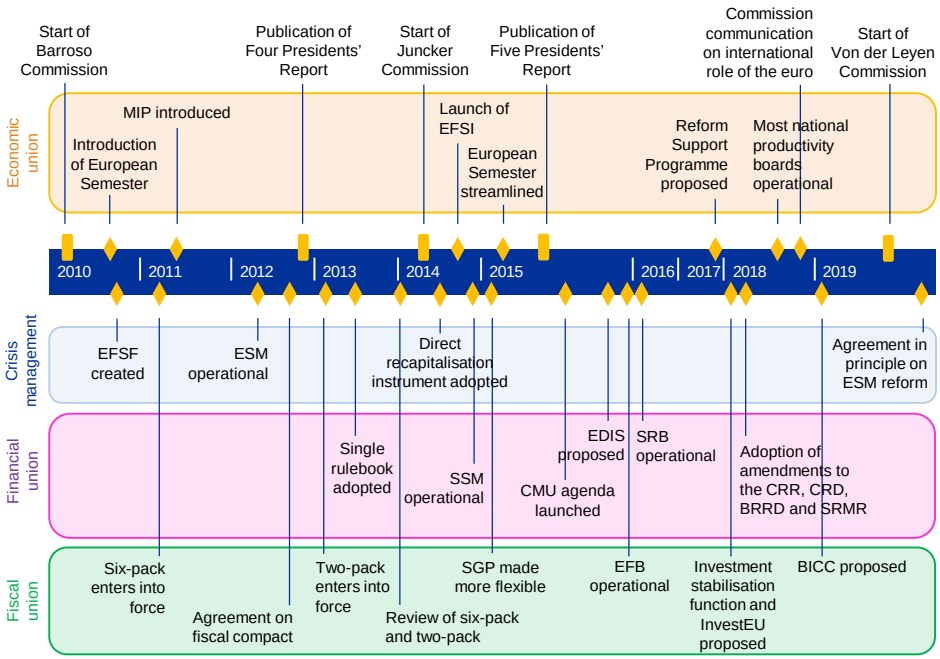
Responsibility for reforming the architecture of EMU is shared by all EU institutions and Member States. The Commission plays a key role by tabling proposals (including legislative drafts), which are adopted by the ECOFIN Council (the finance ministers of the EU27), typically in cooperation with the European Parliament. In policy terms, the Eurogroup (the finance ministers of euro area countries, who are sometimes joined in meetings by the finance ministers of non -euro area countries) is the main locus when it comes to giving strategic guidance and negotiating the deepening of the euro area's architecture. Ultimately, political decisions on EMU are taken at Euro Summits, which bring together the heads of state or government of euro area countries. Different decision-making processes apply if policy areas are intergovernmental (e.g. within the framework of the ESM). The ECB participates in these EU and euro area fora and acts as an adviser on EMU reforms. Thus, reforms to EMU are a product of the interplay between these various actors and their competences in the legislative process.

The EU's last two legislative periods saw significant progress on the architecture of EMU (as outlined in Figure 1). The introduction of the Single Supervisory Mechanism (SSM) and the Single Resolution Mechanism (SRM) delivered two of the three pillars of the banking union, with the third pillar – a European Deposit Insurance Scheme (EDIS) – left incomplete. This built on institutional innovations achieved during the crisis, such as the creation of the ESM, reforms to fiscal rules, and the establishment of the macroeconomic imbalance procedure (MIP) in order to address harmful macroeconomic imbalances. These were all key steps with a view to reducing financial and macroeconomic risks, improving risk sharing, and enhancing the transmission of monetary policy across the euro area.

100. See the Sibiu Declaration.

Figure 1

Timeline of EMU architecture reforms since 2010



Source: ECB, based on https://www.consilium.europa.eu/en/policies/emu-deepening/emu-glossary.
Notes: "MIP" refers to the macroeconomic imbalance procedure; "EFSI" denotes the European Fund for Strategic Investments; the "EFSF" is the European Financial Stability Facility; "ESM" refers to the European Stability Mechanism; "SRB" denotes the Single Resolution Board; the "CRR" is the Capital Requirements Regulation; the "CRD" is the Capital Requirements Directive; "BRRD" refers to the Bank Recovery and Resolution Directive; "SRMR" denotes the Single Resolution Mechanism Regulation; "EDIS" refers to the European Deposit Insurance Scheme; the "SGP" is the Stability and Growth Pact; the "EFB" is the European Fiscal Board; "BICC" refers to the budgetary instrument for convergence and competitiveness; the "six-pack" comprises six regulations aimed at strengthening the SGP and establishing the MIP; the "two-pack" comprises regulations aimed at strengthening the budgetary surveillance cycle in EMU; and the "fiscal compact" is an intergovernmental treaty on the anchoring of fiscal rules in national constitutions.

However, that deepening of EMU has lost its initial momentum. Private and public risk sharing are still more limited in the euro area than they are in other monetary unions (such as the United States). The banking union remains incomplete without the EDIS, and further progress is needed on the establishment of a genuine CMU. On the fiscal side, the euro area continues to lack a central fiscal capacity for the purposes of macroeconomic stabilisation. At the same time, mechanisms aimed at ensuring resilient policies at national level could be strengthened further. The Stability and Growth Pact (SGP) is widely regarded as requiring simplification in order to make the EU's fiscal rules more effective and countercyclical and improve ownership at national level, while the implementation rate for structural reforms under the European Semester and the effectiveness of the MIP both remain poor. A deeper and more complete EMU (including an enhanced CMU) would, in the context of the pursuit of sound economic policies[101] in the euro area, also support the international role of the euro.[102]

The deepening of EMU is just one of a number of challenges facing the Commission, the Council and the European Parliament. Official statements by the

101. See Masuch, K., Anderton, R., Setzer, R. and Benalal, N. (eds.), "Structural policies in the euro area", *Occasional Paper Series*, No 210, ECB, 2018.

102. See ECB, "The international role of the euro", June 2019, and the European Commission's communication of 5 December 2018 entitled "Towards a stronger international role of the euro".

new Commission indicate that significant emphasis will also be placed on the environment, migration and digitalisation, in addition to demographic issues and global tensions.[103] This reflects the changing priorities of European citizens, as reported in the autumn 2019 Standard Eurobarometer.[104] The Sibiu Declaration, in which Europe's heads of state or government set out the EU's strategic agenda for the period 2019-24,[105] contained a reference to the deepening of EMU under the general heading "Developing our economic base: the European model for the future". Charles Michel, the new Council President, will be tasked with following up on that declaration and has indicated that enhancing EMU is particularly relevant in the context of strengthening the international role of the euro.[106] Alongside issues such as investment, employment and inequality, the European Parliament has called for further progress on all aspects of the deepening of EMU and has asked the Commission to table proposals in this regard.[107]

Further decisions and follow-up work on a number of different aspects of the deepening of EMU are scheduled for the near future. The Euro Summit of 13 December 2019 took stock of ongoing work in relation to the banking union, with the High-Level Working Group on a European Deposit Insurance Scheme being tasked, under the aegis of the Eurogroup, with drawing up proposals with a view to establishing a roadmap towards completion of the banking union. It also took note of the planned reform of the ESM (on which high -level agreement had been reached at the Eurogroup's December 2019 meeting) and the main features of the BICC. For the remainder of 2020, the work programmes of the various EU fora foresee that the ESM reform package will be ratified by national parliaments, the BICC will be legislated for by the European Parliament and the Council, and the High-Level Forum established by the Commission will put forward proposals for new CMU priorities. Moreover, work towards the establishment of a comprehensive banking union package is likely to continue, a review of the fiscal and economic governance framework is to be undertaken by the Commission, technical discussions on a fiscal capacity for the euro area will continue, and a new proposal for a European unemployment reinsurance scheme may potentially be made. The next section will provide more details on these various work streams.

103. For details of the Commission's political priorities for the period 2019-24, see https://ec.europa.eu/info/strategy/priorities-2019-2024_en

104. In particular, 34% of euro area respondents (unchanged from the previous survey six months earlier) regarded immigration as a pressing issue for the EU, while a cumulative 38% (up 3 percentage points) regarded climate change and the environment as priorities at EU level. In contrast, only 18% of euro area respondents (unchanged from the previous survey) regarded the economic situation as a priority, with 15% (down 3 percentage points) regarding Member States' public finances as a key issue.

105. See https://www.consilium.europa.eu/media/39291/en_leaders-agenda-note-on-strategic-agenda-2019-2024-0519.pdf

106. See the remarks made by Charles Michel after the European Council meeting on 13 December 2019: https://www.consilium.europa.eu/nl/press/press-releases/2019/12/13/remarks-by-president-charles-michel-after-the-european-council-meetings-on-13-december-2019

107 See, for example, https://www.europarl.europa.eu/doceo/document/TA-8-2016-0312_EN.html

2 State of play as regards the various elements of EMU architecture

The structure and approach advocated by the Four and Five Presidents' Reports in 2012 and 2015 respectively provide a useful framework for analysing the current state of play.[108] Those reports, which were written by the Presidents of the European Commission, the European Council, the Eurogroup, the European Central Bank and – in the case of the Five Presidents' Report – the European Parliament, set out a comprehensive roadmap. Both reports structured their architectural proposals around four unions (financial, fiscal, economic and political) and argued that there was important interplay between those unions. For example, advances in the banking union would reduce any negative feedback loops between struggling banks and the fiscal health of sovereigns, thereby reducing the need for public money and public risk sharing.[109] At the same time, private and public risk sharing were not just seen as substitutes; they were regarded as complementary. The Four and Five Presidents' Reports also combined proposals aimed at achieving risk reduction and convergence with proposals encouraging more risk sharing – recognising that risk sharing, if designed appropriately, reinforces risk reduction. Finally, those reports proposed an approach to the deepening of EMU, linking risk sharing and risk reduction in a comprehensive roadmap with a timeline and clear milestones. That vision was based largely on a resilience narrative – a desire to make the euro area more resilient and better able to withstand any new crisis.[110] While that kind of holistic perspective continues to exist in the background and can serve as a useful benchmark, it is important to understand that, in practice, discussions in the various EU fora tend to now follow more of a dossier-by-dossier approach. Consequently, the sections below review the various individual dossiers in turn, but group them together in a manner similar to that applied in the Four and Five Presidents' Reports.

2.1 Banking union

The financial crisis highlighted the need to make structural improvements to Europe's institutional framework in order to safeguard financial stability and create a level playing field across the euro area. The Four Presidents' Report of June 2012 proposed the establishment of an integrated financial framework, building on the single rulebook, with a single European banking supervisor and a common deposit insurance and resolution framework. That report argued that a single banking supervisor was needed to ensure uniform application of prudential rules and ensure that banks in all Member States were supervised with the same degree of effectiveness.

108. See the Four Presidents' Report and the Five Presidents' Report.

109. See the article entitled "Risk sharing in the euro area", *Economic Bulletin*, Issue 3, ECB, 2018.

110. The recent "7+7 report" by seven French economists and seven German economists made similar arguments. See Bénassy-Quéré et al., "Reconciling risk sharing with market discipline: A constructive approach to euro area reform", *CEPR Policy Insights*, No 91, 2018.

The Four Presidents' Report also included proposals on bank resolution and deposit insurance. That report proposed the establishment of a European resolution scheme (to be funded primarily via contributions from banks) which could ensure the harmonised application of resolution measures to banks overseen by European supervision, with the goal of ensuring the orderly winding-down of non -viable institutions and protecting taxpayers' money. Finally, on the subject of deposit insurance, the report proposed the introduction of a European dimension to national deposit guarantee schemes for banks under European supervision, with the objective of increasing the credibility of existing arrangements and ensuring that depositors have sufficient protection.

The Five Presidents' Report, which was published in June 2015, reiterated the key messages of the Four Presidents' Report as regards the banking union, but also included a new and more detailed proposal for an EDIS. It called for the establishment of an EDIS as the third pillar of the banking union in order to increase resilience against future crises, since the current set-up with national deposit guarantee schemes was considered to be vulnerable to large local shocks, particularly where both the sovereign in question and the national banking sector were perceived to be fragile. That report argued that a European scheme was also more likely to be fiscally neutral over time than national schemes, since risks would be spread more widely and contributions to the European deposit insurance fund (ex ante and risk-based) would be raised across a much larger pool of financial institutions. While the report acknowledged that setting up a fully fledged EDIS would take time, it argued in favour of taking a number of concrete steps as a starting point, building on the existing framework – for example, by designing the EDIS as a reinsurance system for national deposit guarantee schemes.

As originally proposed by the Four and Five Presidents' Reports, the banking union should comprise three pillars (as illustrated in Table 1): (i) common supervision under the SSM; (ii) common resolution arrangements under the SRM; and (iii) common deposit insurance under an EDIS (which has yet to be established). The banking union is underpinned by a single rulebook, which builds on key contributions by the various European supervisory authorities (ESAs), with the European Banking Authority (EBA) having specific responsibility for the banking sector. The SSM is tasked with ensuring the safety and soundness of the European banking system, fostering financial integration and stability, and ensuring consistent supervision. Those objectives are achieved by adopting a uniform approach to day -to-day supervision, by implementing harmonised supervisory actions and corrective measures, and by ensuring the consistent application of regulations and supervisory policies. The SRM and the Bank Recovery and Resolution Directive (BRRD) have strengthened the euro area's crisis management framework, with the aim of reducing the cost of future bank failures for taxpayers and the real economy and tackling the bank-sovereign nexus. As regards the third pillar, the European Commission presented a proposal for an EDIS in November 2015. That proposal envisaged a gradual process, starting with reinsurance (whereby the European deposit insurance fund would intervene only after national schemes had been exhausted, and only within certain limits) and ending with a fully fledged European deposit insurance scheme (whereby the European fund would intervene immediately, with full coverage of all

financial needs relating to deposit insurance functions). However, no agreement has yet been reached on this issue, and discussions are still ongoing. Establishing the third pillar of the banking union is crucial to ensure uniform deposit protection across the euro area, regardless of a bank's location. This, in turn, will preserve depositors' confidence, prevent bank runs and safeguard financial stability, thereby complementing the supervisory pillar. It will also help to address the bank-sovereign nexus, as it will prevent national governments from being called upon to act as a backstop for national deposit guarantee schemes, thereby complementing the resolution pillar. Thus, all three pillars of the banking union will be complementary and mutually reinforcing. It is therefore of the essence that the third pillar is established, completing the architecture of the banking union. Outside observers such as the IMF have also called for the banking union to be completed in a comprehensive manner.[111]

Table 1

State of play as regards the banking union

Concluded	In progress	Desirable but not yet under way
	Pillar 1: Single Supervisory Mechanism	
Establishment of the SSM	Measures aimed at fully addressing regulatory fragmentation	
Capital requirements (CRR/CRD)	Steps to balance the interests of home and host supervisors of cross-border banking groups	
	Pillar 2: Single Resolution Mechanism	
Establishment of the SRM	Backstop to the SRF	
Adoption of the BRRD	Adjustments to crisis management framework	
	Liquidity in resolution	
	A framework for liquidation of banks of all sizes	
	Pillar 3: European Deposit Insurance Scheme	
Harmonisation of national deposit guarantee schemes	Fully fledged EDIS	
	Other elements	
	Regulatory treatment of sovereign exposures and common safe assets	

Source: ECB.

The SSM was established rapidly – becoming operational only two years after the Four Presidents' Report – and has made significant progress. Indeed, the progress and achievements made by the SSM have been recognised by numerous outside observers, including the European Commission in its October 2017 report on the SSM[112] and the IMF in its 2018 financial system stability assessment for the euro

111. See, for example, the IMF's 2018 financial system stability assessment for the euro area.

112 See the Report from the Commission to the European Parliament and the Council on the Single Supervisory Mechanism established pursuant to Regulation (EU) No 1024/2013: "Based on document analysis and interviews with relevant stakeholders, the Commission comes to an overall positive assessment of the application of the SSM Regulation and the first years of the ECB acting in its supervisory capacity. The first Pillar of the Banking Union has now been fully implemented and is functional, with clear benefits in terms of level playing field and confidence emerging from the integrated supervision of credit institutions."

area.[113] Those achievements include the harmonisation of supervisory practices, as well as significant improvements to a number of risk metrics, such as capital buffers, liquidity reserves and non-performing loans.

The establishment of the second pillar of the banking union was also rapid and represents a key milestone in the process of strengthening Europe's bank resolution framework. The SRM, with the Single Resolution Board (SRB) at its heart and the Single Resolution Fund (SRF) providing resolution financing, has been operational since 2016. The SRF pools contributions received from credit institutions in the banking union and has a target capacity of at least 1% of the total covered deposits of all authorised credit institutions in participating Member States, which must be reached by the end of 2023. Under the supervision of resolution authorities, banks are in the process of building up loss-absorption capacity as required by the minimum requirements for own funds and eligible liabilities (MREL). MREL liabilities include regulatory capital, but they also include other liabilities (e.g. senior unsecured bonds) which are deemed able to absorb losses and contribute to recapitalisation needs in the event of resolution. At the Euro Summit in June 2018, it was agreed that the ESM would provide a common backstop to the SRF in the form of a revolving credit line, starting in 2024. That backstop will have the same firepower as the SRF (i.e. 1% of covered deposits), thus doubling the resources that are available to support and facilitate bank resolution. Moreover, it was agreed at the Euro Summit in December 2018 that the backstop could be introduced before 2024 if sufficient risk reduction had been achieved in banks' balance sheets. Work on making the backstop operational is ongoing.

Despite the progress made so far, the banking union remains incomplete. Outstanding issues include regulatory fragmentation, gaps in the crisis management framework (e.g. the lack of a harmonised insolvency regime), the absence of a common deposit insurance scheme, and the lack of a common framework for the provision of liquidity in resolution. A number of these elements are linked, and in June 2019 the High-Level Working Group on a European Deposit Insurance Scheme (which consists of members of the Eurogroup Working Group) was tasked with carrying out further technical work and identifying a transitional path with a view to addressing unresolved issues and moving towards a steady state banking union (see Table 1 for an overview of the various elements). At the Eurogroup meeting on 4 December 2019, the Chair of the High-Level Working Group put forward several proposals:[114]

- An EDIS should be established, initially covering only liquidity needs, but eventually encompassing also loss coverage in line with progress on risk reduction. In the initial phase, a hybrid approach could be adopted, providing liquidity support within certain limits and relying on existing national deposit

113. Op. cit. in footnote 13: *"Banking supervision in the euro area has improved significantly following the creation of the Single Supervisory Mechanism (SSM). A detailed assessment against the Basel Core Principles finds that the SSM has established its operational independence and effectiveness, intensifying supervision while harmonizing at a high level. The SSM has also implemented sophisticated risk analysis in the process of setting capital targets for individual institutions."*

114. For more detailed information on those proposals, see the letter that the Chair of the High-Level Working Group sent to the Eurogroup: https://www.consilium.europa.eu/media/41644/2019-12-03-letter-from-the-hlwg-chair-to-the-peg.pdf

guarantee schemes, with a central fund gradually being established. In a subsequent phase, the EDIS could also increasingly cover losses.

- The regulatory treatment of sovereign exposures (RTSE) should be reformed gradually. Initially, supervisory (Pillar 2) and transparency (Pillar 3) requirements could be strengthened further. Following further analysis and an impact assessment, risk-based contributions to the EDIS could also take account of sovereign exposures, and that regulatory treatment could also include the gradual phasing-in of concentration charges for sovereign exposures. That gradual phasing-in of measures would take due account of the possible impact on national debt markets and financial stability. Further analysis of a "European safe portfolio" (i.e. safe assets and the role they play in the banking sector) should also be conducted.

- **Proposals were also made in respect of the crisis management framework and cross-border integration.** These involved, among other things, harmonising elements of insolvency law, formalising support arrangements within EU banking groups (i.e. establishing a formal mechanism for subsidiaries' support by their parents), phasing out options and national discretions that had ceased to be justified, reviewing the governance of the SRB and facilitating cross -border banking. These measures should ensure that bank failures can be tackled effectively and without bailouts, preserving a level playing field and ensuring financial stability. It was also suggested that financial integration should be strengthened by rolling back prudential and non-prudential obstacles to cross-border banking between Member States.

There was broad recognition at that Eurogroup meeting that the High-Level Working Group's report contained important proposals for the strengthening of EMU. The High-Level Working Group and the Eurogroup Working Group have been asked to continue working on all elements. Further work will also be carried out by the institutions and the relevant Council working parties.

Work will also continue in the relevant European fora on the provision of liquidity to banks in resolution. When failing banks go into resolution, viable parts can be resolved and restructured, re-entering the marketplace either as a stand -alone entity or as part of a larger banking group. During this transition phase, they may temporarily lack access to the market liquidity that they need in order to successfully reinitiate their operations. This is why other jurisdictions (such as the United Kingdom and the United States) have established public systems that provide liquidity to banks in resolution. Although they vary in terms of their precise design, these systems generally rely on central bank liquidity, underpinned by fiscal guarantees. No such functionality exists at euro area level, implying a de facto fallback onto national solutions.

National solutions, however, do not reflect the reality that large euro area banks are now supervised at European level, creating a mismatch between liability and control. Moreover, national solutions risk fuelling the bank-sovereign nexus, as fiscal authorities may have to backstop banks' liquidity needs using national fiscal guarantees. Work is under way with a view to finding an adequate solution to this issue

within the banking union, and various different options are on the table. As banks in resolution may sometimes have substantial liquidity needs, it is essential, in order to facilitate resolution and preserve confidence, that sufficient firepower is available – if necessary, beyond what is available via the SRF and the backstop to the SRF. However, when assessing potential solutions involving the Eurosystem, it is important to note, in this regard, that the Eurosystem can only provide liquidity against adequate collateral.

The Council and the European Parliament are expected to continue working on legislative initiatives relating to the banking union and banking regulation more broadly. This will include proposals made in the previous legislative period which have not yet come to fruition (such as a number of regulations/directives relating to collateral and the recovery and resolution of central counterparty clearing), as well as new initiatives and reviews of existing legislation (including the implementation of Basel III and aspects of the single rulebook relating to capital requirements and resolution).[115]

2.2 Capital markets union

The Five Presidents' Report also called for further development of the CMU. The idea here is that well-functioning capital markets can strengthen cross-border risk sharing through deeper integration of bond and equity markets. An increase in private risk sharing and greater integration of markets can also provide a buffer against systemic shocks in the financial sector. In addition, companies – including small and medium-sized enterprises (SMEs) – will have access to a more diverse range of finance, in addition to bank credit.

The goals of the CMU project, as defined in the Commission's 2015 action plan,[116] are manifold, with the overarching aim being to create "stronger capital markets" in the EU. The CMU project originally stemmed, in essence, from the observation that, relative to other monetary unions, the euro area had less well developed and less integrated capital markets, which were preventing it from enjoying a number of economic benefits. A fully fledged CMU (which, in combination with the banking union, could lay the foundations for a financial union) would "help mobilise capital in Europe and channel it to all companies", as well as "deepen financial integration" through "more cross-border risk sharing, more liquid markets and diversified sources of funding".[117] In its response to the Commission's 2015 green paper,[118] the Eurosystem noted that "CMU has the potential to complement the banking union, strengthen Economic and Monetary Union (EMU) and deepen the Single Market". Outside observers such as the IMF make similar arguments.[119]

115. For updates on the progress of legislative initiatives, see https://www.europarl.europa.eu/legislative-train
116. See https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52015DC0468&from=EN
117. Ibid.
118. See "Building a Capital Markets Union – Eurosystem contribution to the European Commission's Green Paper", April 2015.
119. See Bhatia et al., "A Capital Market Union for Europe", *Staff Discussion Notes*, No 19/07, IMF, 2019.

Most of the proposals listed in the 2015 action plan were implemented in the last legislative period, but more remains to be done. For example, little progress has been made on key issues such as taxation and the harmonisation of insolvency frameworks. Specifically, reforms aimed at removing biases in the tax code that favour debt over equity remain unfinished, and the withholding tax on capital gains remains heterogeneous across the euro area. On the subject of insolvency frameworks, there is still no alignment as regards the question of how to recoup collateral or assign the claims of creditors. In other areas, meanwhile, the initial level of ambition has been lowered significantly. This is true, for example, of the review of the ESAs (particularly as regards the competences of the European Securities and Markets Authority), the supervision of central counterparties as laid down in the European Market Infrastructure Regulation (EMIR 2.2) and the establishment of a Pan-European Pension Product. While measures in some areas may simply need more time in order to achieve their full effect, it seems unlikely that the original 2015 action plan will, on its own, be sufficient to achieve truly integrated capital markets. Specifically, further action will be needed in relation to the convergence of framework conditions, the harmonisation of capital market products and processes, and supervisory convergence (see Table 2 for an overview).

Table 2

State of play as regards the CMU

Concluded	Selected areas where further work is needed
Convergence of framework conditions	
Insolvency frameworks: Restructuring and Second Chance Directive	Harmonisation of insolvency frameworks Measures aimed at harmonising/addressing specific tax issues
Harmonisation and development of products and processes	
Pan-European Pension Product Simple, transparent and standardised securitisation	Development of sustainable finance as a key component of EU capital markets Cross-border portability of pensions and harmonisation of their tax treatment Development of an EU-wide approach to fintech and digitalisation
Supervisory convergence	
Review of ESAs	Steps towards the establishment of a single capital market supervisor

Source: ECB.

Strengthening the EU's capital markets will become even more important after Brexit. Regulatory drivers – in particular, the end of passporting rights for certain UK-based activities – are already having an effect on the geography of financial centres in the EU. Preliminary evidence suggests that a small number of new financial hubs appear to be emerging as a result of the relocation – or planned relocation – of certain activities. The persistence of such dynamics, and the emergence of a clearly multi-centric euro area financial system, could pose a number of challenges. In particular, without further progress on the CMU, a more fragmented financial structure could eventually jeopardise private risk sharing.

Where services can continue to be provided out of London on the basis of third-country access regimes, regulatory and supervisory consistency is

needed. A fragmented framework for third-country access, relying on a patchwork of existing national regimes, could give rise to regulatory arbitrage, with firms potentially seeking to circumvent host supervision and EU regulatory requirements. Appropriate oversight will be needed, with EU regulators and supervisors being given adequate tools, especially considering that existing third-country regimes were not designed to manage substantial cross-border provision of services.

Measures aimed at developing capital markets would help to strengthen the EU's domestic capacity in areas where reliance on London is more pronounced. A substantial reduction in the provision of cross-border services by the City of London would strengthen the case for developing domestic capacity. CMU initiatives have been launched in order to support the development of certain market segments, such as securitisation and crowdfunding. The CMU project also seeks to increase the use of equity financing through its role in supporting investment and private risk sharing. Thus, in a post-Brexit world, initiatives fostering the development of genuine capital markets will be even more important.

The Commission has initiated further work on the CMU with a view to presenting legislative proposals in 2020. The High-Level Forum established by the Commission has been tasked with putting forward proposals for the next CMU action plan by the end of May 2020. The High-Level Forum is exploring three questions: (i) how to create an ecosystem that allows greater cross-border raising of capital, with a particular focus on innovative SMEs; (ii) how to establish pan -European capital market architecture, with a particular focus on the question of how new financial technologies can support this process;[120] and (iii) how investment choices and access to capital market services can foster greater participation by retail investors.

The Council is also looking at issues in this area. In October 2019, a high-level working group established by a number of Member States published proposals aimed at relaunching the CMU. These included recommendations aimed at generating long-term savings opportunities, developing equity markets, enhancing cross-border financial flows, and developing debt, credit and forex financing tools. The conclusions of the December 2019 ECOFIN meeting call for a roadmap to be drawn up for the deepening of the CMU on the basis of six objectives: (i) enhanced access to finance for EU firms (especially SMEs); (ii) the removal of structural and legal barriers to increased cross-border capital flows; (iii) the provision of incentives encouraging well-informed retail savers to invest, and the removal of obstacles standing in their way; (iv) support for transition to sustainable economies; (v) the embracing of technological progress and digitalisation; and (vi) strengthening of the global competitiveness of EU capital markets.[121] Those conclusions invite the Commission to assess and explore detailed measures and actions that could help to achieve these objectives.

While there is broad acknowledgement of the importance of the CMU, the challenge will be to transform that ambition into concrete and ambitious

120. The ECB is participating in this work stream as an observer.

121. See https://www.consilium.europa.eu/en/press/press-releases/2019/12/05/capital-markets-union-council-sets-objectives-for-the-deepening-of-the-project

measures during the current legislative cycle. Many of the proposals in the original 2015 action plan have already been implemented, but some have ended up being less ambitious than was originally intended.

2.3 Fiscal instruments for the euro area

In the realm of fiscal union, the Five Presidents' Report called for the establishment of a euro area-wide fiscal stabilisation function for severe crisis situations. In such circumstances, national fiscal buffers may not be able to provide the degree of economic stabilisation that would be optimal from an aggregate euro area perspective. Mature monetary unions typically have a common macroeconomic stabilisation function in order to enhance the economy's resilience to shocks that cannot be managed at national level alone.

Discussions on the establishment and expansion of European fiscal instruments are currently ongoing, with three types of goal in mind: (i) stabilisation of the business cycle, (ii) fostering of convergence through support for structural reforms and (iii) increases in public investment. In addition, negotiations have also been taking place with regard to the reforming of the euro area's crisis architecture (particularly the ESM) and the EU's next multiannual financial framework (covering the period 2021-27) – issues which are not covered in great detail here. For an overview of concluded and ongoing work streams in this area, see Table 3.

Table 3

Fiscal and economic union: state of play as regards EU and euro area fiscal instruments

Concluded	In progress	Desirable but not yet under way
Instruments for stabilisation		
		A genuine incentive-compatible euro area macroeconomic stabilisation function (with common debt issuance)
Instruments for convergence, competitiveness and investment		
InvestEU	Multiannual financial framework (MFF) for the period 2021-27 Budgetary instrument for convergence and competitiveness	

Source: ECB.

In its opinion on the establishment of a European investment stabilisation function (EISF), the ECB welcomed the fact that the creation of a common macroeconomic stabilisation function for the euro area was being discussed.[122] The ECB pointed out that other monetary unions have such functions in order to better deal with economic shocks that cannot be managed at national level. If designed appropriately, a common macroeconomic stabilisation function would increase the economic resilience of both individual participating Member States and the euro area

122. See the general observations made in ECB Opinion CON/2018/51.

as a whole, thereby also supporting the single monetary policy, particularly in the presence of deep euro area-wide recessions.

Thus far, little progress has been made on the establishment of a genuine stabilisation function. In addition to the Commission's 2018 proposal for an EISF,[123] prominent proposals ranging from "rainy day funds" to investment protection schemes and unemployment (re)insurance schemes have been made by international institutions, academics and a number of Member States.[124] Those proposals have been discussed in EU fora, which are continuing to work on them, but only at a technical level. Meanwhile, Commission President Ursula von der Leyen has indicated that she intends to propose a European unemployment benefit reinsurance scheme. At this stage, however, there is no concrete information on the possible design of such a scheme.[125]

Rather than a stabilisation function, it has been agreed, as a compromise, that a budgetary instrument for convergence and competitiveness will be created in order to provide EU funds to Member States for structural reforms and investment. In its agreement of 10 October 2019, the Eurogroup set out the main features of the BICC, including key governance principles and financing modalities, as well as core parameters for the allocation of funds.[126] Funds will be allocated to each Member State on the basis of its population and the inverse of its gross national income (GNI) per capita, with a "juste retour" floor of 70%. (In other words, Member States can never receive less than 70% of the funds that they have paid in.) As regards national co-financing rates, the agreement foresees a rate of 25%, while a modulation procedure envisages that this rate can be cut in half in the presence of severe economic circumstances.[127] The main outstanding issues relating to the BICC concern its size and financing. As regards the amount of funding to be provided from the EU budget, the Eurogroup and the Commission had proposed a sum of €17 billion, but in December the Finnish EU Presidency proposed a substantially lower amount of €12.9 billion as part of the negotiation of the multiannual financial framework. On the subject of financing, the Eurogroup Working Group has been tasked with carrying out further discussions in 2020 on an intergovernmental agreement (IGA) that could funnel additional resources into the BICC. This has resulted in a dedicated report providing further information on the rationale for the IGA and its content, modalities and scope.[128] A final decision – including a decision on the IGA – will be taken by

123. The Commission has also made proposals on convergence and public investment in the form of a plan for a Reform Support Programme and a proposal to turn the European Fund for Strategic Investments (the "Juncker Plan") into InvestEU (see http://europa.eu/rapid/press-release_IP-18-3972_en.htm).

124. See, for example, the IMF's proposal on a central fiscal capacity for the euro area and the proposal made by 14 French and German economists on reconciling risk sharing with market discipline.

125. See "A Union that strives for more: My agenda for Europe – Political Guidelines for the next European Commission 2019-24". For a technical assessment of the various different design options for a European unemployment insurance scheme, see Koester, G. and Sondermann, D., "A euro area macroeconomic stabilisation function: assessing options in view of their redistribution and stabilisation properties", *Occasional Paper Series*, No 216, ECB, 2018.

126. See the Eurogroup term sheet on the budgetary instrument for convergence and competitiveness.

127. A national co-financing rate of 25% means that a quarter of the costs of a particular project are borne by the receiving Member State, while the remaining 75% are financed via the EU budget. The degree of co-financing required to receive EU funds may temporarily be reduced by half in the presence of severe economic circumstances, as defined in the Stability and Growth Pact. Such cyclical modulation can occur in the event of a negative annual GDP volume growth rate or if a country experiences an accumulated loss of output (see Article 2 of Council Regulation (EC) No 1467/97).

128 See the Eurogroup report on a possible intergovernmental agreement for the budgetary instrument for convergence and competitiveness.

Europe's leaders in the context of the MFF negotiations. Given that it is currently expected to be fairly limited in terms of capacity, the BICC will probably not have a material impact on the convergence, competitiveness or stabilisation of the euro area. Equipping the BICC with additional resources via an IGA will therefore be essential in order to increase its effectiveness.

At the same time, over the last few years, a number of budgetary instruments aimed at supporting investment have been developed and scaled up at EU28 – rather than euro area – level. In 2014, the European Commission launched its Investment Plan for Europe (the "Juncker Plan") as a collective fiscal instrument at EU level in order to reverse the downward trend in investment and help sustain the economic recovery. By October 2019, the Investment Plan for Europe had triggered €439.4 billion in additional investment across the EU. Indeed, according to the Commission, investment under this programme had increased EU GDP by 0.9% by 2019 and will increase it by a cumulative total of 1.8% by 2022. The European Investment Bank (EIB) is another budgetary instrument that exists at EU level. In 2012, the EIB's capital was increased further (bringing its subscribed capital to €232.4 billion) with the aim of contributing to economic growth in Europe. That increase in capital has allowed the EIB to provide about €60 billion in additional lending over a three-year period, thereby further increasing the macroeconomic impact of its operations.

Looking ahead, there are several proposals aimed at increasing the EU's support for investment which may have a beneficial macroeconomic impact at euro area level, albeit they do not seek to achieve countercyclical effects and are limited in size. In the Commission's proposal for the 2021-27 multiannual financial framework, the largest relative increase in the EU budget can be seen in the area of support for investment. The InvestEU programme proposed for the next MFF is expected to place the European Fund for Strategic Investments and 13 other EU financial instruments under a single roof, mobilising at least €650 billion in additional investment.[129] Moreover, the Sustainable Investment Plan announced by the new Commission is expected to trigger €1 trillion in climate-related investment between 2020 and 2030. The Commission tabled a proposal on this issue on 8 January 2020.

The establishment of a central fiscal capacity could involve the issuance of some form of safe asset at euro area level. In this context, the General Board of the European Systemic Risk Board (ESRB) set up a High-Level Task Force on Safe Assets, which investigated the practical considerations relating to sovereign bond -backed securities (SBBSs).[130] At present, however, no specific proposals on euro area safe assets are being discussed in EU fora at political level.

A discussion on reorienting EU policies – including the EU budget – towards the provision of public goods such as environmental protection, digitalisation and security is gaining traction. The Commission has made climate change its central priority for the next five years, and the French and German governments recently commissioned a study looking at the potential of European public goods across a wide

129. See the European Commission's press release of 6 June 2018.

130. See the first volume of the report produced by the High-Level Task Force on Safe Assets for the main findings in this regard.

range of policy areas in the context of the changing geopolitical conditions facing the EU.[131] Even if they have no impact on policies at EU level, these discussions could still lead to greater coordination between the national policies of individual countries.

2.4 Governance of national fiscal and economic policies

In the realm of fiscal and economic union, the Five Presidents' Report called for stronger coordination of national policies under both the Stability and Growth Pact and the MIP. On the subject of fiscal policies, that report emphasised the need for responsible budgetary policies at Member State level. A review of the six-pack and two-pack – a related consultation process was launched by the Commission on 5 February[132] – was identified as an opportunity to increase clarity, transparency, compliance and legitimacy, while preserving the stability -oriented nature of the fiscal rules. Better compliance with fiscal rules was to be achieved via the establishment of the European Fiscal Board (EFB), which would coordinate and complement national fiscal councils and provide an independent assessment of Member States' compliance with the rules of the Stability and Growth Pact. As regards economic policies, the Five Presidents' Report emphasised the need for further economic convergence in order to achieve consistently resilient economic structures throughout the euro area. A network of competitiveness authorities ("national productivity boards") was envisaged for the euro area in order to track performance in the field of competitiveness, prevent economic divergence and increase ownership of the necessary reforms at national level. Moreover, the Five Presidents' Report also called for stronger surveillance under the MIP to encourage structural reforms and better capture imbalances at the level of the euro area as a whole. Meanwhile, the European Semester was to place greater emphasis on the coordination of economic policies.

An effective coordination system for national economic policies is essential for the smooth functioning of EMU. This is of vital importance in order to support the single monetary policy and bolster economic convergence both within and across countries.

The fiscal and economic governance framework in EMU has been reformed over the years, drawing on lessons learned both before and during the crisis. The six-pack reform of 2011 and the two-pack reform of 2013 sought to place greater emphasis on debt[133] and expenditure control, strengthening enforcement, improving the monitoring of macroeconomic imbalances and establishing independent fiscal institutions at national level. Since then, EU fiscal rules have been subject to continuous refinement and interpretative innovation, which has resulted in greater complexity and increased the scope for discretion. The EFB and national productivity boards have also been established. The Five Presidents' Report, which called for the creation of the EFB, anticipated that it would act as an advisory body, coordinating and

131. See the Bruegel study by Jean Pisani-Ferry and Clemens Fuest that was prepared for the French and German finance ministers.

132. See the Commission's communication on its economic governance review, which was published on 5 February 2020.

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

complementing national fiscal councils and providing a public and independent assessment of the implementation of the EU's fiscal governance framework.[134] Meanwhile, the Five Presidents' Report's call for a network of competitiveness authorities in the euro area to prevent economic divergence and increase ownership of the necessary reforms at national level resulted in the Council recommending the establishment of national productivity boards.[135] Table 4 provides an overview of developments in this area.

Table 4

Fiscal and economic union: state of play as regards the governance of national policies

Concluded	In progress	Desirable but not yet under way
Fiscal rules		
Two-pack and six-pack reforms to improve Stability and Growth Pact	Review of two-pack and six-pack: more simple and effective rules to ensure countercyclicality and sustainability	
European and national fiscal boards		
Structural reforms and macroeconomic imbalance procedure		
European Semester with greater emphasis on euro area priorities	Reform support via budgetary instrument for convergence and competitiveness	Full use of MIP, including corrective arm
Structural Reform Support Service	Reform of six-pack: improvement of the MIP	New instruments to strengthen reforms
National productivity boards		Completion of the Single Market

Source: ECB.

However, the reform of the Stability and Growth Pact has had mixed results. Overall, the debt and deficit levels of the euro area as a whole are below those seen in other major advanced economies. There are no ongoing excessive deficit procedures (EDPs) at present, and many euro area countries have now reached their medium-term budgetary objectives (MTOs).[136] At the same time, some countries have made insufficient progress in terms of reducing government debt and deficits.[137] There are currently limited fiscal buffers available to support growth if downside risks to the current economic outlook materialise, particularly in high-debt countries. In addition to criticism of their limited effect as a disciplining device, the EFB and others have also pointed out that the rules have become too complex and overly reliant on unobservable variables such as output gaps. Moreover, the Stability and Growth Pact does not contain rules or instruments aimed at steering the aggregate euro area fiscal stance, and little effort has been made to improve the quality of public finances, irrespective of the fiscal stance.[138]

134. See the box entitled "The creation of a European Fiscal Board", *Economic Bulletin*, Issue 7, ECB, 2015.
135. See the Council recommendation of 20 September 2016.
136. See the article entitled "Fiscal rules in the euro area and lessons from other monetary unions", *Economic Bulletin*, Issue 3, ECB, 2019.
137. See Kamps, C. and Leiner-Killinger, N., "Taking stock of the functioning of the EU fiscal rules and options for reform", *Occasional Paper Series*, No 231, ECB, 2019; and Kamps, C. and Hauptmeier, S., "Debt rule design in theory and practice – the SGP's debt benchmark revisited", *Working Paper Series*, ECB, forthcoming.
138. See the article entitled "The euro area fiscal stance", *Economic Bulletin*, Issue 4, ECB, 2016; and Bańkowski, K. and Ferdinandusse, M., "Euro area fiscal stance", *Occasional Paper Series*, No 182, ECB, 2017.

As regards structural policies, continued weak implementation of country -specific recommendations (CSRs) by Member States – including those with excessive imbalances – remains a challenge for the European Semester.[139] Indeed, in February 2019 the Commission concluded that none of the 2018 CSRs for euro area countries had been "fully" implemented.[140] Meanwhile, "substantial" progress was only observed for around 5% of CSRs. This was similar to the situation seen in previous years. As such, the streamlining of the European Semester (by reducing the number of CSRs) and the enhancement of the dialogue between the Commission and Member States have not yielded the intended improvements. Moreover, countries with excessive imbalances do not seem to have taken further decisive policy action to step up the implementation of their CSRs. Finally, the macroeconomic imbalance procedure has not yet been applied in full, as the Commission has never exercised its right to initiate an excessive imbalance procedure (EIP).[141]

The Commission is now in the process of reviewing both the six-pack and the two-pack, with that review due to be concluded in 2020.[142] That review, which was launched on 5 February, will take account of four key weaknesses in the fiscal framework: (i) the high levels of debt in some Member States; (ii) the procyclical nature of fiscal policies; (iii) the complexity of rules and the lack of ownership; and (iv) the fact that insufficient attention is paid to investment. The Commission has also launched a consultation process, inviting stakeholders (including the ECB) to provide their views on the question of how the economic governance framework has functioned so far and how best to enhance its effectiveness. That consultation process will run until the summer, and the Commission will then take all responses into consideration when it reflects internally on possible next steps in the second half of the year.

A number of possible ways of rectifying the EU's fiscal governance framework have been put forward by stakeholders. In 2017, for instance, the Commission proposed amending the Treaty on Stability, Coordination and Governance (the "fiscal compact") and integrating it into the EU's legal framework.[143] Meanwhile, the IMF,[144] the EFB[145] and ECB staff[146] have all advocated reforming the Stability and Growth Pact on the basis of a single long-run debt target and a single operational instrument (such as an expenditure rule). The EFB has called for a wide-ranging review aimed at simplifying the rules, combined with progress towards the establishment of a

139. See Pierluigi, B. and Sondermann, D., "Macroeconomic imbalances in the euro area: where do we stand?", *Occasional Paper Series*, No 211, ECB, 2018.

140. See the box entitled "Country-specific recommendations for economic policies under the 2019 European Semester", *Economic Bulletin*, Issue 5, ECB, 2019.

141. See Sondermann, D. and Zorell, N., "A macroeconomic vulnerability model for the euro area", *Working Paper Series*, No 2306, ECB, 2019, for a discussion of the MIP scoreboard indicators in the context of an early warning approach.

142. See the Commission's tentative schedule as of 3 December 2019.

143. See ECB Opinion CON/2018/25 of 11 May 2018 on a proposal for a Council directive laying down provisions for strengthening fiscal responsibility and the medium-term budgetary orientation in the Member States.

144. See Andrle, M. et al., "Reforming Fiscal Governance in the European Union", *Staff Discussion Notes*, No 15/09, IMF, May 2015.

145. See EFB, "Assessment of EU fiscal rules with a focus on the six and two-pack legislation", August 2019.

146. See Kamps, C. and Leiner-Killinger, N., "Taking stock of the functioning of the EU fiscal rules and options for reform", *Occasional Paper Series*, No 231, ECB, 2019; and Hauptmeier, S. and Kamps, C., "Debt rule design in theory and practice – the SGP's debt benchmark revisited", *Working Paper Series*, ECB, *forthcoming*.

stabilisation capacity.[147] Most observers also see a link between further risk sharing and market discipline.

On the subject of reforming the European Semester and the MIP, no major proposals have been tabled, other than the BICC. The Commission has, however, indicated that it intends to integrate the UN Sustainable Development Goals into the European Semester, as well as possibly replacing the EU2020 Agenda (which serves as an anchor for the European Semester) with the UN's 2030 Agenda for Sustainable Development.

At the same time, in the context of growing concerns about global competition, digitalisation and climate change, the Single Market is set to feature more prominently in the Commission's agenda going forward. Ambitious policy agendas in these three areas have the potential to open up new sources of growth and play an important role in accelerating convergence within EMU, which historically grew out of the Single Market. Services, for example, remain underdeveloped and could help to bring about more integrated and resilient product markets.[148] [149] The Commission has also launched a Green New Deal, which is expected to mobilise additional investment in order to finance the transition process.

2.5 Crisis management

The establishment of a fiscal backstop for the euro area in the form of the European Stability Mechanism was of fundamental importance for the resilience of EMU. In response to the euro area sovereign debt crisis, euro area countries established the European Financial Stability Facility (EFSF) in 2010. This was followed in 2012 by the establishment of the ESM as a permanent euro area crisis management body outside the EU's legal framework. Together, the EFSF and the ESM have disbursed €295 billion in financial assistance since 2010.

Over the last two years, euro area countries have been negotiating a reform of the ESM in order to increase its operational capacity. In December 2019, the Eurogroup agreed in principle on four broad reforms, which will be reflected in a revised ESM Treaty. First, the ESM will act as a backstop for the Single Resolution Fund. Second, the ESM will play a more prominent role in the design and monitoring of conditionality requirements in macroeconomic adjustment programmes, as well as external programmes. Third, the conditions for accessing the ESM's precautionary support will be set out more clearly. And fourth, the framework for assessing the sustainability of debt will be refined further, and single-limb collective action clauses

147. The EFB has, however, noted that Member States do not regard the current practices as sufficiently destabilising to make such a review a high priority.

148. See the Commission's assessment of the implementation of the Services Directive.

149. See ECB Opinion CON/2018/25 of 11 May 2018 on a proposal for a Council directive laying down provisions for strengthening fiscal responsibility and the medium-term budgetary orientation in the Member States.

(CACs) will be introduced as of 2022. The revised ESM Treaty should be signed in the coming months, once all remaining legal issues have been resolved.[150]

2.6 Other institutional issues ("political union")

The Five Presidents' Report stressed that institutional innovations need to be accompanied by greater economic integration. Specifically, greater responsibility at EU and euro area level needs to go hand in hand with "greater democratic accountability, legitimacy and institutional strengthening".[151]

As regards these broader institutional reforms, a number of initiatives proposed in the Five Presidents' Report have yet to materialise (see Table 5 for an overview). These initiatives include, for example, more unified external representation of the euro area and the establishment of a euro area treasury. Meanwhile, others have called for clearer separation between the prosecution and adjudicatory roles within the Commission, in order to strengthen its ability to act as the guardian of the Treaty in enforcing the Stability and Growth Pact. Moreover, the ESM and the fiscal compact have not yet been integrated into EU law. While the Commission put forward proposals in these areas, both co-legislators eventually decided not to follow up on them. In a similar vein, the policy proposal presented by the Commission in 2017 with a view to establishing a euro area treasury[152] met with strong scepticism in the Council, and the Commission never made a formal legislative proposal. These institutional reforms could potentially become more relevant when it comes to the institutional arrangements for any future fiscal capacity.

Table 5

State of play as regards other institutional issues

Concluded	In progress	Desirable but not yet under way
Interplay with national policies		
Intensified dialogue with European and national parliaments, as well as governments, through the European Semester		
Further institutional negotiations and coherence of EU legal order		
		Unified international role representing the euro area Euro area treasury/European High Representative for the Economy and Finance Integration of the ESM and the fiscal compact into EU law

Source: ECB, based on Five Presidents' Report.

Treaty change could potentially take place under this Commission, opening up avenues for broader institutional reforms. The Commission envisages a

150. The euro area's crisis management framework will be discussed in greater depth in a forthcoming issue of the Economic Bulletin, which will include a more detailed assessment of these ESM reforms.

151. See the Five Presidents' Report.

152. See the Commission's "Reflection Paper on the Deepening of the Economic and Monetary Union", May 2017.

Conference on the Future of Europe, starting in 2020 and running for two years, which could result in the revision of EU Treaties. While the remit of such a conference will be decided in cooperation with the European Parliament and the Council, the Commissioner-designate in charge of this dossier has signalled an intention to focus mainly on the issue of democratic participation, which could include giving the European Parliament the right of legislative initiative.[153] In response to the Commission's tabling of this suggestion, France and Germany published a joint paper on 25 November 2019 outlining their views on the remit and process for such an intergovernmental conference.[154]

3 Conclusions

The new European legislature will be able to build on the significant steps that were taken to improve EMU architecture in the previous decade. The establishment of the European Stability Mechanism, the reforming of fiscal rules and the establishment of the macroeconomic imbalance procedure all helped to address fault lines exposed by the crisis. The subsequent introduction of the Single Supervisory Mechanism and the Single Resolution Mechanism then delivered two of the three pillars of the banking union.

Nevertheless, the agenda that was proposed in the Five Presidents' Report has yet to be fully implemented, with outstanding measures in the financial, fiscal, economic and political domains. There is no room for complacency when it comes to making EMU better able to withstand adverse shocks. Private and public debt remain elevated in many countries, private and public risk sharing are still more limited in the euro area than they are in other monetary unions, and mechanisms aimed at ensuring resilient policies at national level could be strengthened further.

The first priority is the need to complete the banking union. An unfinished banking union will prevent the euro area and its citizens from reaping the full benefits when it comes to market integration and the uniform protection of depositors. There is, however, some momentum in this regard, which should be seized upon in order to pursue a package of measures in parallel:

- Establish a European Deposit Insurance Scheme: The establishment of a fully fledged EDIS should be the key priority, as it is the main element that is missing in terms of completing the banking union. In the short to medium term, a common deposit insurance scheme could be set up on the basis of a hybrid model, relying on existing national schemes and a central fund, with loss coverage gradually increasing over the next five years. However, the end goal should be an EDIS with full loss and liquidity coverage, in order to ensure uniform protection of covered deposits.

153. See Commissioner-designate Dubravka Šuica's hearing before the European Parliament's Committee on Constitutional Affairs.

154. See https://www.politico.eu/wp-content/uploads/2019/11/Conference-on-the-Future-of-Europe.pdf

- Harmonise national bank insolvency procedures at European level: Bank insolvency frameworks continue to vary across countries, potentially giving rise to very significant differences in terms of outcomes. Taking the US Federal Deposit Insurance Corporation (FDIC) as a model, a harmonised liquidation framework should be established, and the Single Resolution Board should be given the tools needed to oversee the orderly liquidation of banks (especially in the case of small and medium-sized banks which are not subject to resolution).

- Remove impediments to the free flow of capital and liquidity: In order to protect domestic bank balance sheets against adverse shocks, capital and liquidity should be allowed to flow freely within EMU (including within cross -border banking groups). Striking a balance between the interests of financial integration and financial stability will be crucial in order to remove those impediments within the euro area.

- Recognise that the regulatory treatment of sovereign exposures and the development of a common euro area safe asset can be two additional mutually supportive aspects of the deepening of EMU: Work on a sound and prudent design for each concept should continue independently. The introduction of RTSE needs to take into account financial stability considerations and reinforces the case for ensuring sufficient availability of safe assets for the liquidity and risk management of financial institutions. At the same time, the creation of a common euro area safe asset, if so decided by Member States, should be pursued in a way that does not undermine incentives for sound national fiscal policies. That common safe asset will also be conducive to the smooth conduct of monetary policy. Together with RTSE, it will also contribute to the safety and soundness of banks, as well as contributing indirectly to the strengthening of the international role of the euro.

- Close the gap in terms of the provision of liquidity to banks in resolution: A European-level guarantee promising access to Eurosystem liquidity for banks in resolution would bring the euro area into line with other major jurisdictions such as the United Kingdom and the United States.

- Improve Europe's anti-money laundering (AML) framework: The existing AML Directive should be turned into a regulation, establishing an effective European toolkit combating money laundering. An EU body outside the ECB should be given responsibility for AML tasks and could be equipped with direct supervisory powers.

A second priority is the development of a European capital market, which is vital in order to improve private risk sharing and is an area that remains underdeveloped. The European Commission and its High-Level Forum looking at the CMU are expected to make proposals on this issue in early 2020. Those proposals will need to show renewed ambition in order to drive the CMU project forward, particularly as regards the following:

- **Fostering supervisory convergence:** A genuine CMU will need to have a single capital market supervisor at European level, with a level playing field not

only in terms of regulation, but also as regards supervisory practices and their application across the EU.

- **Harmonising products and standards:** Capital market products and standards should be harmonised, with a Pan-European Pension Product and common standards for securitisation, fintech and green bonds, for example.

- **Convergence of framework conditions:** In order to create a landscape conducive to vibrant capital markets, the EU requires greater convergence of framework conditions with a bearing on the CMU, such as tax and insolvency frameworks.

A third priority is the need to improve the euro area's fiscal architecture, which has not entirely delivered as intended. The current fiscal rules do not do enough to ensure the achievement of sound and sustainable fiscal positions in economic good times. The resulting lack of fiscal space in bad times may then entail a need for procyclical fiscal tightening, which may render the macroeconomic policy mix inappropriate at the euro area level. Going forward, there is therefore a need for the following:

- **Reforms to fiscal rules to make them simpler, more effective and less procyclical:** There is a fairly broadly based consensus in both academia and policy institutions that it would be beneficial to move towards a framework with a single indicator (e.g. an expenditure rule) with links to a debt anchor. The ongoing review of the two-pack and the six-pack represents an opportunity to reassess the effectiveness of the SGP framework.

- **Creation of a central fiscal capacity for the euro area for the purposes of macroeconomic stabilisation:** The existing rules are not conducive to the establishment of a euro area-wide fiscal policy stance that could complement monetary policy, particularly at the effective lower bound. A central budgetary function of this kind would help to increase the euro area's resilience when facing severe economic crises.

A fourth priority is the need to improve the resilience of national economic structures. The implementation of structural reforms to increase the resilience of labour and product markets, as well as institutions, has waned in recent years. Two different avenues can be leveraged in order to address this:

- Use the macroeconomic imbalance procedure more effectively: Existing means of coordinating economic policy – including the excessive imbalance procedure – should be applied more effectively.

- Deepen the Single Market: Europe is increasingly shifting from the production of goods to the provision of services – an area where the Single Market is not as well developed (partly as a result of shortcomings in terms of the implementation of the Services Directive). Consequently, there are still many national regulations governing the delivery of different types of service in the various Member States. With that in mind, the Commission should place renewed emphasis on initiatives aimed at deepening the Single Market, reaping the benefits of its proven track

record of boosting economic growth. In parallel, it could explore the possibility of broadening the scope of the Single Market in areas where reform efforts have lost momentum (e.g. as regards conditions for doing business).

Progress in these outstanding areas will support the effectiveness of the single monetary policy and banking supervision and help to preserve financial stability. Sound countercyclical fiscal policies, completion of the banking union, sufficient financial resilience and cross-border private and public risk sharing are all important to the ECB in order to allow for more effective transmission of monetary policy with fewer side effects, enhance the alignment of euro area business cycles, complement monetary policy, give European banking supervision greater traction and safeguard financial stability.

Statistics

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Further information

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

Conventions used in the tables

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

1 External environment

1.1 Main trading partners, GDP and CPI

	GDP [1] (period-on-period percentage changes)						CPI (annual percentage changes)						
	G20	United States	United Kingdom	Japan	China	Memo item: euro area	OECD countries		United States	United Kingdom (HICP)	Japan	China	Memo item: euro area [2] (HICP)
							Total	excluding food and energy					
	1	2	3	4	5	6	7	8	9	10	11	12	13
2017	3.9	2.4	1.9	2.2	6.8	2.5	2.3	1.9	2.1	2.7	0.5	1.6	1.5
2018	3.7	2.9	1.3	0.3	6.6	1.9	2.6	2.1	2.4	2.5	1.0	2.1	1.8
2019	.	.	1.4	0.7	6.1	1.2	2.0	2.2	1.8	1.8	0.5	2.9	1.2
2019 Q1	0.8	0.8	0.6	0.5	1.4	0.5	2.2	2.2	1.6	1.9	0.3	1.8	1.4
Q2	0.7	0.5	-0.1	0.6	1.6	0.1	2.3	2.2	1.8	2.0	0.8	2.6	1.4
Q3	0.7	0.5	0.5	0.0	1.4	0.3	1.9	2.2	1.8	1.8	0.3	2.9	1.0
Q4	.	0.5	0.0	-1.8	1.5	0.1	1.8	2.1	2.0	1.4	0.5	4.3	1.0
2019 Sep.	-	-	-	-	-	-	1.6	2.1	1.7	1.7	0.2	3.0	0.8
Oct.	-	-	-	-	-	-	1.6	2.0	1.8	1.5	0.2	3.8	0.7
Nov.	-	-	-	-	-	-	1.8	2.1	2.1	1.5	0.5	4.5	1.0
Dec.	-	-	-	-	-	-	2.1	2.1	2.3	1.3	0.8	4.5	1.3
2020 Jan.	-	-	-	-	-	-	2.3	2.1	2.5	1.8	0.7	5.4	1.4
Feb. [3]	-	-	-	-	-	-	.	.	.	.	.	.	1.2

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 [1]		
	Composite Purchasing Managers' Index						Global Purchasing Managers' Index [2]					
	Global [2]	United States	United Kingdom	Japan	China	Memo item: euro area	Manufacturing	Services	New export orders	Global	Advanced economies	Emerging market economies
	1	2	3	4	5	6	7	8	9	10	11	12
2017	53.2	54.3	54.7	52.5	51.8	56.4	53.8	53.8	52.8	5.8	3.1	7.6
2018	53.4	55.0	53.3	52.1	52.3	54.6	53.1	53.8	50.8	4.4	3.1	5.3
2019	51.7	52.5	50.2	50.5	51.8	51.3	50.3	52.2	48.8	-0.5	0.3	-1.0
2019 Q1	52.8	54.8	50.6	50.6	51.5	51.5	50.9	53.4	49.6	-0.8	-0.1	-1.3
Q2	51.5	51.8	50.5	50.8	51.6	51.8	50.4	51.8	49.4	-0.6	-1.2	-0.2
Q3	51.4	51.4	50.1	51.3	51.4	51.2	50.4	51.7	48.5	1.4	1.6	1.2
Q4	51.3	51.9	49.5	49.2	52.6	50.7	51.3	51.4	49.6	-0.7	-3.1	0.9
2019 Sep.	51.2	51.0	49.3	51.5	51.9	50.1	50.9	51.3	48.6	1.4	1.6	1.2
Oct.	50.8	50.9	50.0	49.1	52.0	50.6	51.1	50.7	49.6	1.3	0.3	1.9
Nov.	51.6	52.0	49.3	49.8	53.2	50.6	51.7	51.6	49.5	0.1	-1.7	1.3
Dec.	51.6	52.7	49.3	48.6	52.6	50.9	51.2	51.8	49.5	-0.7	-3.1	0.9
2020 Jan.	52.4	53.3	53.3	50.1	51.9	51.3	51.3	52.8	49.5	.	.	.
Feb.	45.0	49.6	53.0	47.0	27.5	51.6	42.6	45.8	44.5	.	.	.

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

2 Financial developments

2.1 Money market interest rates

(percentages per annum; period averages)

	Euro area [1]						United States	Japan
	Euro short-term rate (€STR) [2]	Overnight deposits (EONIA)	1-month deposits (EURIBOR)	3-month deposits (EURIBOR)	6-month deposits (EURIBOR)	12-month deposits (EURIBOR)	3-month deposits (LIBOR)	3-month deposits (LIBOR)
	1	2	3	4	5	6	7	8
2017	-	-0.35	-0.37	-0.33	-0.26	-0.15	1.26	-0.02
2018	-0.45	-0.36	-0.37	-0.32	-0.27	-0.17	2.31	-0.05
2019	-0.48	-0.39	-0.40	-0.36	-0.30	-0.22	2.33	-0.08
2019 Aug.	-0.45	-0.36	-0.41	-0.41	-0.40	-0.36	2.16	-0.10
Sep.	-0.49	-0.40	-0.45	-0.42	-0.39	-0.34	2.13	-0.09
Oct.	-0.55	-0.46	-0.46	-0.41	-0.36	-0.30	1.98	-0.11
Nov.	-0.54	-0.45	-0.45	-0.40	-0.34	-0.27	1.90	-0.10
Dec.	-0.54	-0.46	-0.45	-0.39	-0.34	-0.26	1.91	-0.06
2020 Jan.	-0.54	-0.45	-0.46	-0.39	-0.33	-0.25	1.82	-0.05
Feb.	-0.54	-0.45	-0.47	-0.41	-0.36	-0.29	1.68	-0.07

Source: ECB.

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

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

2.2 Yield curves

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

	Spot rates					Spreads			Instantaneous forward rates			
	Euro area [1], [2]					Euro area [1], [2]	United States	United Kingdom	Euro area [1], [2]			
	3 months	1 year	2 years	5 years	10 years	10 years - 1 year	10 years - 1 year	10 years - 1 year	1 year	2 years	5 years	10 years
	1	2	3	4	5	6	7	8	9	10	11	12
2017	-0.78	-0.74	-0.64	-0.17	0.52	1.26	0.67	0.83	-0.66	-0.39	0.66	1.56
2018	-0.80	-0.75	-0.66	-0.26	0.32	1.07	0.08	0.51	-0.67	-0.45	0.44	1.17
2019	-0.68	-0.66	-0.62	-0.45	-0.14	0.52	0.34	0.24	-0.62	-0.52	-0.13	0.41
2019 Aug.	-0.84	-0.88	-0.93	-0.92	-0.65	0.23	-0.27	0.03	-0.94	-1.00	-0.73	-0.12
Sep.	-0.70	-0.76	-0.81	-0.77	-0.52	0.24	-0.10	0.03	-0.83	-0.86	-0.58	-0.02
Oct.	-0.67	-0.69	-0.69	-0.62	-0.36	0.32	0.17	-0.01	-0.70	-0.69	-0.41	0.14
Nov.	-0.61	-0.63	-0.65	-0.57	-0.30	0.34	0.18	0.04	-0.66	-0.65	-0.33	0.23
Dec.	-0.68	-0.66	-0.62	-0.45	-0.14	0.52	0.34	0.24	-0.62	-0.52	-0.13	0.41
2020 Jan.	-0.62	-0.65	-0.68	-0.64	-0.40	0.26	0.06	-0.11	-0.69	-0.71	-0.46	0.10
Feb.	-0.68	-0.74	-0.79	-0.78	-0.57	0.16	0.13	-0.06	-0.80	-0.85	-0.64	-0.13

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 Euro MTS Ltd and ratings provided by Fitch Ratings.

2.3 Stock market indices

(index levels in points; period averages)

	Dow Jones EURO STOXX indices												United States	Japan
	Benchmark		Main industry indices											
	Broad index	50	Basic materials	Consumer services	Consumer goods	Oil and gas	Financials	Industrials	Technology	Utilities	Telecoms	Health care	Standard & Poor's 500	Nikkei 225
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2017	376.9	3,491.0	757.3	268.6	690.4	307.9	182.3	605.5	468.4	272.7	339.2	876.3	2,449.1	20,209.0
2018	375.5	3,386.6	766.3	264.9	697.3	336.0	173.1	629.5	502.5	278.8	292.9	800.5	2,746.2	22,310.7
2019	373.6	3,435.2	731.7	270.8	721.5	324.4	155.8	650.9	528.2	322.0	294.2	772.7	2,913.4	21,697.2
2019 Aug.	363.6	3,355.3	704.2	262.0	722.8	303.0	144.1	639.4	523.4	325.7	281.9	778.9	2,897.5	20,629.7
Sep.	379.7	3,514.5	738.2	271.3	751.1	319.7	151.8	669.4	545.0	338.5	294.7	804.3	2,982.2	21,585.5
Oct.	382.8	3,551.2	748.2	273.3	742.2	316.6	157.0	671.1	556.8	341.4	306.7	791.7	2,977.7	22,197.5
Nov.	398.4	3,693.1	794.5	283.0	761.3	328.8	163.6	711.6	585.2	339.4	304.8	837.7	3,104.9	23,278.1
Dec.	400.9	3,715.3	799.3	290.0	755.9	322.8	165.1	716.0	598.5	341.8	295.3	862.5	3,176.7	23,660.4
2020 Jan.	406.9	3,758.2	791.2	295.5	758.6	324.6	166.1	728.8	624.6	362.0	291.6	886.8	3,278.2	23,642.9
Feb.	407.1	3,734.9	797.3	292.3	734.5	301.0	168.4	722.8	635.8	391.4	298.1	895.0	3,277.3	23,180.4

Source: ECB.

2 Financial developments

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

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

	Deposits				Revolving loans and overdrafts	Extended credit card credit	Loans for consumption			Loans to sole proprietors and unincorporated partnerships	Loans for house purchase					
	Overnight	Redeemable at notice of up to 3 months	With an agreed maturity of:				By initial period of rate fixation		APRC [3)]		By initial period of rate fixation				APRC [3)]	Composite cost-of-borrowing indicator
			Up to 2 years	Over 2 years			Floating rate and up to 1 year	Over 1 year			Floating rate and up to 1 year	Over 1 and up to 5 years	Over 5 and up to 10 years	Over 10 years		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2019 Feb.	0.03	0.43	0.32	0.70	5.97	16.61	5.28	5.71	6.27	2.41	1.58	1.85	1.87	1.84	2.09	1.80
Mar.	0.03	0.41	0.30	0.76	5.90	16.65	5.41	5.61	6.17	2.36	1.59	1.82	1.83	1.81	2.06	1.78
Apr.	0.03	0.41	0.32	0.75	5.88	16.66	5.56	5.63	6.19	2.36	1.59	1.78	1.77	1.77	2.02	1.75
May	0.03	0.44	0.31	0.79	5.81	16.67	5.61	5.76	6.34	2.33	1.57	1.80	1.73	1.74	1.99	1.72
June	0.03	0.44	0.32	0.82	5.81	16.63	5.42	5.67	6.24	2.31	1.55	1.74	1.67	1.65	1.95	1.67
July	0.03	0.43	0.31	0.80	5.75	16.58	5.74	5.73	6.30	2.34	1.55	1.72	1.59	1.57	1.90	1.61
Aug.	0.03	0.43	0.28	0.78	5.75	16.60	6.15	5.75	6.35	2.25	1.51	1.69	1.54	1.50	1.84	1.56
Sep.	0.03	0.43	0.27	0.78	5.82	16.61	5.65	5.61	6.17	2.22	1.46	1.65	1.49	1.43	1.77	1.48
Oct.	0.03	0.42	0.24	0.83	5.70	16.63	5.89	5.55	6.19	2.26	1.45	1.59	1.44	1.39	1.74	1.44
Nov.	0.03	0.42	0.23	0.73	5.61	16.64	5.36	5.53	6.25	2.21	1.43	1.59	1.61	1.48	1.80	1.47
Dec.	0.03	0.42	0.22	0.80	5.58	16.70	5.44	5.28	5.89	2.09	1.46	1.58	1.43	1.39	1.75	1.41
2020 Jan. [p]	0.02	0.42	0.27	0.73	5.62	16.70	5.63	5.69	6.25	2.21	1.46	1.52	1.43	1.42	1.73	1.44

Source: ECB.

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

2) Including non-profit institutions serving households.

3) Annual percentage rate of charge (APRC).

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

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

	Deposits			Revolving loans and overdrafts	Other loans by size and initial period of rate fixation									Composite cost-of-borrowing indicator
	Overnight	With an agreed maturity of:			up to EUR 0.25 million			over EUR 0.25 and up to 1 million			over EUR 1 million			
		Up to 2 years	Over 2 years		Floating rate and up to 3 months	Over 3 months and up to 1 year	Over 1 year	Floating rate and up to 3 months	Over 3 months and up to 1 year	Over 1 year	Floating rate and up to 3 months	Over 3 months and up to 1 year	Over 1 year	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2019 Feb.	0.03	0.03	0.52	2.21	2.15	2.41	2.33	1.65	1.64	1.69	1.13	1.39	1.56	1.64
Mar.	0.03	0.07	0.62	2.17	2.17	2.38	2.30	1.66	1.58	1.68	1.19	1.36	1.57	1.65
Apr.	0.03	0.06	0.54	2.19	2.19	2.36	2.26	1.67	1.60	1.64	1.16	1.33	1.44	1.62
May	0.03	0.04	0.46	2.14	2.18	2.38	2.29	1.66	1.59	1.63	1.09	1.17	1.50	1.57
June	0.03	0.03	0.57	2.17	2.13	2.33	2.25	1.63	1.55	1.56	1.09	1.28	1.39	1.55
July	0.03	0.04	0.56	2.11	2.07	2.50	2.20	1.66	1.57	1.54	1.16	1.32	1.39	1.56
Aug.	0.03	-0.04	0.54	2.08	2.07	2.36	2.19	1.64	1.59	1.53	1.06	1.32	1.40	1.52
Sep.	0.03	-0.05	0.88	2.16	2.03	2.25	2.15	1.61	1.51	1.44	1.10	1.26	1.29	1.54
Oct.	0.02	-0.03	0.44	2.08	2.01	2.41	2.11	1.61	1.54	1.40	1.14	1.40	1.27	1.56
Nov.	0.02	-0.04	0.39	2.06	2.02	2.36	2.13	1.59	1.55	1.41	1.14	1.34	1.29	1.55
Dec.	0.01	0.00	0.42	2.09	2.00	2.28	2.08	1.58	1.54	1.39	1.26	1.21	1.37	1.55
2020 Jan. [p]	0.01	-0.06	0.33	2.09	2.17	2.32	2.11	1.63	1.57	1.45	1.11	1.23	1.28	1.55

Source: ECB.

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

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

2 Financial developments

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

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

	Outstanding amounts							Gross issues [1]						
	Total	MFIs (including Euro-system)	Non-MFI corporations			General government		Total	MFIs (including Euro-system)	Non-MFI corporations			General government	
			Financial corporations other than MFIs	FVCs	Non-financial corporations	Central govern-ment	Other general govern-ment			Financial corporations other than MFIs	FVCs	Non-financial corporations	Central govern-ment	Other general govern-ment
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Short-term														
2017	1,240	519	155	.	70	438	57	367	167	54	.	37	79	31
2018	1,217	504	170	.	72	424	47	389	171	66	.	41	76	35
2019	1,274	550	172	.	84	406	61	414	177	80	.	47	73	38
2019 Aug.	1,371	587	184	.	112	424	63	414	180	85	.	39	71	38
Sep.	1,392	597	185	.	105	439	66	412	156	88	.	48	81	41
Oct.	1,352	579	174	.	106	424	69	421	184	65	.	52	75	45
Nov.	1,337	570	173	.	102	425	66	374	148	77	.	44	75	30
Dec.	1,274	550	172	.	84	406	61	318	112	89	.	37	45	35
2020 Jan.	1,358	595	169	.	99	422	73	495	206	75	.	56	100	57
Long-term														
2017	15,353	3,560	3,060	.	1,223	6,866	643	247	66	73	.	18	83	7
2018	15,744	3,688	3,161	.	1,247	7,022	627	228	64	68	.	15	75	6
2019	16,319	3,820	3,401	.	1,320	7,152	626	247	69	74	.	20	78	7
2019 Aug.	16,195	3,784	3,278	.	1,293	7,200	639	128	24	50	.	8	41	6
Sep.	16,270	3,805	3,312	.	1,319	7,200	634	284	82	91	.	34	74	4
Oct.	16,223	3,802	3,328	.	1,316	7,153	623	274	61	97	.	24	85	6
Nov.	16,369	3,833	3,406	.	1,329	7,172	628	275	63	109	.	26	71	6
Dec.	16,319	3,820	3,401	.	1,320	7,152	626	162	58	65	.	14	24	2
2020 Jan.	16,404	3,857	3,408	.	1,324	7,190	625	321	118	68	.	16	110	10

Source: ECB.

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

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

(EUR billions; percentage changes)

	Debt securities							Listed shares			
	Total	MFIs (including Eurosystem)	Non-MFI corporations			General government		Total	MFIs	Financial corporations other than MFIs	Non-financial corporations
			Financial corporations other than MFIs	FVCs	Non-financial corporations	Central government	Other general government				
	1	2	3	4	5	6	7	8	9	10	11
Oustanding amount											
2017	16,593.4	4,079.9	3,214.9	.	1,293.1	7,304.7	700.8	7,963.3	612.5	1,258.3	6,092.6
2018	16,961.2	4,192.8	3,330.5	.	1,318.7	7,445.8	673.4	7,033.1	465.0	1,108.9	5,459.2
2019	17,592.9	4,369.8	3,573.5	.	1,404.9	7,558.3	686.4	8,604.3	546.0	1,410.7	6,647.6
2019 Aug.	17,566.2	4,371.4	3,462.5	.	1,405.7	7,624.6	702.0	7,849.5	462.4	1,204.6	6,182.4
Sep.	17,662.3	4,401.9	3,496.9	.	1,424.2	7,639.5	699.8	8,190.9	496.1	1,356.9	6,337.9
Oct.	17,574.4	4,380.9	3,501.7	.	1,421.6	7,577.4	692.8	8,265.6	508.2	1,369.0	6,388.3
Nov.	17,705.2	4,402.8	3,579.5	.	1,431.2	7,597.7	693.9	8,511.9	524.1	1,401.7	6,586.2
Dec.	17,592.9	4,369.8	3,573.5	.	1,404.9	7,558.3	686.4	8,604.3	546.0	1,410.7	6,647.6
2020 Jan.	17,761.7	4,451.8	3,577.1	.	1,423.7	7,611.9	697.3	8,486.9	525.3	1,391.4	6,570.2
Growth rate											
2017	1.3	-0.5	0.1	.	6.0	2.2	0.4	1.0	6.1	2.8	0.2
2018	1.9	1.7	3.0	.	3.3	1.9	-4.3	0.7	0.3	2.4	0.4
2019	3.1	3.8	5.1	.	5.6	1.5	1.8	0.0	0.5	-0.1	0.0
2019 Aug.	3.2	4.9	3.1	.	5.3	2.2	1.6	-0.1	0.4	-0.1	-0.1
Sep.	3.1	4.3	3.6	.	5.0	1.8	3.1	-0.1	0.4	-0.1	-0.1
Oct.	2.9	3.9	4.0	.	5.2	1.5	1.3	-0.1	0.4	-0.1	-0.2
Nov.	3.0	3.9	4.8	.	6.3	1.3	1.6	-0.1	0.4	0.0	-0.2
Dec.	3.1	3.8	5.1	.	5.6	1.5	1.8	0.0	0.5	-0.1	0.0
2020 Jan.	3.1	4.1	5.1	.	5.7	1.4	2.0	0.0	0.5	-0.1	0.0

Source: ECB.

2 Financial developments

2.8 Effective exchange rates [1)]

(period averages; index: 1999 Q1=100)

	EER-19						EER-38	
	Nominal	Real CPI	Real PPI	Real GDP deflator	Real ULCM	Real ULCT	Nominal	Real CPI
	1	2	3	4	5	6	7	8
2017	96.6	91.4	91.9	86.2	79.9	90.3	112.0	90.0
2018	98.9	93.4	93.4	87.5	80.3	91.3	117.9	93.8
2019	97.3	91.2	91.8	.	.	.	116.7	91.5
2019 Q1	97.4	91.7	92.1	86.0	79.2	89.2	116.7	92.1
Q2	97.3	91.4	91.7	85.9	78.6	88.9	116.8	91.8
Q3	97.7	91.4	91.8	86.2	79.7	89.1	116.9	91.5
Q4	97.0	90.4	91.4	.	.	.	116.2	90.5
2019 Sep.	97.4	91.1	91.7	-	-	-	116.7	91.2
Oct.	97.4	90.9	91.7	-	-	-	116.6	90.9
Nov.	96.7	90.2	91.1	-	-	-	116.0	90.3
Dec.	96.7	90.1	91.4	-	-	-	116.0	90.2
2020 Jan.	96.2	89.3	90.9	-	-	-	115.5	89.4
Feb.	95.6	88.7	90.2	-	-	-	114.9	88.8
Percentage change versus previous month								
2020 Feb.	-0.6	-0.7	-0.7	-	-	-	-0.5	-0.7
Percentage change versus previous year								
2020 Feb.	-1.8	-3.3	-2.1	-	-	-	-1.5	-3.5

Source: ECB.

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

2.9 Bilateral exchange rates

(period averages; units of national currency per euro)

	Chinese renminbi	Croatian kuna	Czech koruna	Danish krone	Hungarian forint	Japanese yen	Polish zloty	Pound sterling	Romanian leu	Swedish krona	Swiss franc	US Dollar
	1	2	3	4	5	6	7	8	9	10	11	12
2017	7.629	7.464	26.326	7.439	309.193	126.711	4.257	0.877	4.5688	9.635	1.112	1.130
2018	7.808	7.418	25.647	7.453	318.890	130.396	4.261	0.885	4.6540	10.258	1.155	1.181
2019	7.735	7.418	25.670	7.466	325.297	122.006	4.298	0.878	4.7453	10.589	1.112	1.119
2019 Q1	7.663	7.422	25.683	7.464	317.907	125.083	4.302	0.873	4.7358	10.419	1.132	1.136
Q2	7.672	7.418	25.686	7.467	322.973	123.471	4.282	0.875	4.7480	10.619	1.126	1.124
Q3	7.800	7.394	25.734	7.463	328.099	119.323	4.318	0.902	4.7314	10.662	1.096	1.112
Q4	7.801	7.439	25.577	7.471	331.933	120.323	4.287	0.861	4.7666	10.652	1.096	1.107
2019 Sep.	7.832	7.401	25.868	7.463	332.448	118.242	4.353	0.891	4.7381	10.697	1.090	1.100
Oct.	7.845	7.436	25.689	7.469	331.462	119.511	4.301	0.875	4.7538	10.802	1.098	1.105
Nov.	7.757	7.440	25.531	7.472	333.617	120.338	4.285	0.858	4.7698	10.650	1.098	1.105
Dec.	7.797	7.442	25.497	7.472	330.706	121.241	4.273	0.847	4.7779	10.483	1.093	1.111
2020 Jan.	7.683	7.443	25.216	7.473	334.380	121.363	4.251	0.849	4.7788	10.554	1.076	1.110
Feb.	7.630	7.454	25.051	7.471	337.171	120.026	4.277	0.841	4.7837	10.568	1.065	1.091
Percentage change versus previous month												
2020 Feb.	-0.7	0.2	-0.7	0.0	0.8	-1.1	0.6	-1.0	0.1	0.1	-1.1	-1.8
Percentage change versus previous year												
2020 Feb.	-0.2	0.5	-2.6	0.1	6.1	-4.2	-0.9	-3.6	0.7	0.7	-6.3	-3.9

Source: ECB.

2 Financial developments

2.10 Euro area balance of payments, financial account

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

	Total [1]			Direct investment		Portfolio investment		Net financial derivatives	Other investment		Reserve assets	Memo: Gross external debt
	Assets	Liabilities	Net	Assets	Liabilities	Assets	Liabilities		Assets	Liabilities		
	1	2	3	4	5	6	7	8	9	10	11	12
Outstanding amounts (international investment position)												
2018 Q4	25,405.3	25,871.5	-466.1	10,895.0	8,975.7	8,475.1	10,542.1	-87.9	5,404.0	6,353.6	719.1	14,209.5
2019 Q1	26,666.3	26,969.6	-303.3	11,184.9	9,113.4	9,126.6	11,318.5	-91.5	5,705.2	6,537.6	741.1	14,674.3
Q2	26,804.9	27,085.3	-280.4	11,037.1	9,054.3	9,226.8	11,461.7	-75.4	5,845.6	6,569.3	770.8	14,770.8
Q3	27,834.1	27,960.6	-126.5	11,405.6	9,344.7	9,612.9	11,906.0	-89.0	6,077.6	6,709.9	827.0	15,089.2
Outstanding amounts as a percentage of GDP												
2019 Q3	235.5	236.5	-1.1	96.5	79.0	81.3	100.7	-0.8	51.4	56.8	7.0	127.6
Transactions												
2019 Q1	353.3	292.4	60.9	92.0	31.5	58.2	141.4	3.0	197.2	119.6	2.9	-
Q2	187.0	170.8	16.2	-90.3	12.8	51.2	78.7	34.1	189.3	79.4	2.7	-
Q3	442.2	337.4	104.8	162.5	150.6	146.7	153.0	3.2	128.1	33.8	1.7	-
Q4	-316.3	-479.0	162.7	-85.6	-92.2	86.9	-20.7	-2.7	-314.1	-366.1	-0.7	-
2019 July	351.5	320.1	31.4	135.3	138.7	52.5	69.4	11.1	145.5	112.1	7.1	-
Aug.	17.3	-21.8	39.1	-47.9	-63.0	37.2	17.2	-2.3	29.6	24.0	0.7	-
Sep.	73.4	39.1	34.3	75.1	75.0	57.0	66.4	-5.6	-46.9	-102.3	-6.2	-
Oct.	21.4	-42.8	64.2	-11.9	-76.3	43.8	7.0	4.2	-15.6	26.6	1.0	-
Nov.	27.5	-22.6	50.2	9.8	31.7	29.9	16.7	-1.3	-8.5	-71.0	-2.3	-
Dec.	-365.2	-413.6	48.3	-83.5	-47.5	13.3	-44.3	-5.6	-290.0	-321.8	0.5	-
12-month cumulated transactions												
2019 Dec.	666.3	321.6	344.7	78.6	102.7	343.0	352.3	37.6	200.6	-133.4	6.6	-
12-month cumulated transactions as a percentage of GDP												
2019 Dec.	5.6	2.7	2.9	0.7	0.9	2.9	3.0	0.3	1.7	-1.1	0.1	-

Source: ECB.

1) Net financial derivatives are included in total assets.

3 Economic activity

3.1 GDP and expenditure components

(quarterly data seasonally adjusted; annual data unadjusted)

	GDP											
	Total	Domestic demand								External balance [1]		
		Total	Private consumption	Government consumption	Gross fixed capital formation				Changes in inventories [2]	Total	Exports [1]	Imports [1]
						Total construction	Total machinery	Intellectual property products				
	1	2	3	4	5	6	7	8	9	10	11	12
	Current prices (EUR billions)											
2017	11,200.9	10,709.5	6,036.4	2,296.9	2,306.0	1,102.1	708.5	488.9	70.2	491.4	5,295.9	4,804.5
2018	11,562.2	11,062.8	6,207.6	2,363.2	2,407.6	1,171.3	740.9	488.7	84.4	499.4	5,547.9	5,048.5
2019	11,905.4	11,433.2	6,362.4	2,442.2	2,604.9	1,249.2	764.5	584.0	23.8	472.3	5,720.0	5,247.7
2019 Q1	2,949.7	2,819.0	1,574.8	602.6	627.7	309.1	189.7	127.1	13.9	130.7	1,422.4	1,291.7
Q2	2,967.8	2,866.7	1,589.7	608.3	658.2	306.3	189.3	160.9	10.5	101.1	1,426.7	1,325.6
Q3	2,987.1	2,852.7	1,597.1	613.1	642.3	314.3	192.0	134.1	0.2	134.4	1,434.5	1,300.1
Q4	3,006.3	2,894.1	1,602.8	618.2	672.4	317.3	192.9	160.4	0.6	112.2	1,443.5	1,331.3
	as a percentage of GDP											
2019	100.0	96.0	53.4	20.5	21.9	10.5	6.4	4.9	0.2	4.0	-	-
	Chain-linked volumes (prices for the previous year)											
	quarter-on-quarter percentage changes											
2019 Q1	0.5	0.1	0.4	0.4	0.9	1.7	0.5	-0.3	-	-	0.9	0.2
Q2	0.1	1.4	0.2	0.4	5.0	-0.9	0.2	26.5	-	-	0.0	2.7
Q3	0.3	-0.6	0.5	0.6	-3.8	1.2	0.1	-17.7	-	-	0.6	-1.3
Q4	0.1	0.9	0.1	0.3	4.2	0.0	-0.2	20.3	-	-	0.4	2.2
	annual percentage changes											
2017	2.5	2.2	1.7	1.3	3.4	3.6	4.1	2.3	-	-	5.5	5.0
2018	1.9	1.6	1.4	1.1	2.3	2.9	3.9	-1.3	-	-	3.4	2.7
2019	1.2	1.8	1.3	1.6	5.7	3.2	1.8	17.8	-	-	2.5	3.8
2019 Q1	1.4	1.5	1.2	1.4	4.1	4.4	2.7	5.5	-	-	3.1	3.6
Q2	1.2	2.5	1.2	1.3	8.3	2.3	2.0	32.6	-	-	2.2	5.2
Q3	1.3	1.2	1.5	2.0	3.2	3.2	0.9	6.8	-	-	2.7	2.6
Q4	1.0	1.8	1.2	1.8	6.3	2.0	0.7	24.8	-	-	2.0	3.8
	contributions to quarter-on-quarter percentage changes in GDP; percentage points											
2019 Q1	0.5	0.1	0.2	0.1	0.2	0.2	0.0	0.0	-0.4	0.3	-	-
Q2	0.1	1.3	0.1	0.1	1.1	-0.1	0.0	1.1	0.0	-1.2	-	-
Q3	0.3	-0.6	0.3	0.1	-0.8	0.1	0.0	-1.0	-0.1	0.9	-	-
Q4	0.1	0.9	0.1	0.1	0.9	0.0	0.0	0.9	-0.1	-0.8	-	-
	contributions to annual percentage changes in GDP; percentage points											
2017	2.5	2.1	0.9	0.3	0.7	0.3	0.3	0.1	0.2	0.4	-	-
2018	1.9	1.5	0.8	0.2	0.5	0.3	0.2	-0.1	0.0	0.4	-	-
2019	1.2	1.7	0.7	0.3	1.2	0.3	0.1	0.7	-0.5	-0.5	-	-
2019 Q1	1.4	1.5	0.6	0.3	0.8	0.4	0.2	0.2	-0.3	-0.1	-	-
Q2	1.2	2.4	0.6	0.3	1.7	0.2	0.1	1.4	-0.3	-1.2	-	-
Q3	1.3	1.2	0.8	0.4	0.7	0.3	0.1	0.3	-0.7	0.1	-	-
Q4	1.0	1.7	0.7	0.4	1.3	0.2	0.0	1.1	-0.6	-0.7	-	-

Sources: Eurostat and ECB calculations.

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

2) Including acquisitions less disposals of valuables.

3 Economic activity

3.2 Value added by economic activity

(quarterly data seasonally adjusted; annual data unadjusted)

	Gross value added (basic prices)											Taxes less subsidies on products
	Total	Agriculture, forestry and fishing	Manufacturing energy and utilities	Const-ruction	Trade, transport, accom-modation and food services	Infor-mation and com-munica-tion	Finance and insurance	Real estate	Professional, business and support services	Public ad-ministration, education, health and social work	Arts, enter-tainment and other services	
	1	2	3	4	5	6	7	8	9	10	11	12
	Current prices (EUR billions)											
2017	10,040.0	176.3	1,991.5	503.1	1,909.9	468.8	465.9	1,132.7	1,143.5	1,897.7	350.5	1,160.9
2018	10,357.6	178.1	2,040.8	537.9	1,968.7	488.6	472.0	1,166.8	1,194.5	1,954.9	355.2	1,204.6
2019	10,663.3	180.4	2,049.1	579.9	2,031.3	513.6	481.2	1,205.3	1,240.6	2,018.8	363.1	1,242.2
2019 Q1	2,643.1	45.0	515.0	142.7	503.1	125.8	118.8	297.8	306.0	498.8	90.0	306.7
Q2	2,659.5	45.5	512.5	144.0	506.6	128.0	120.0	300.0	309.5	502.4	90.9	308.2
Q3	2,673.3	45.2	511.8	146.0	509.7	128.7	121.0	302.3	311.5	506.0	91.1	313.8
Q4	2,693.2	44.9	513.3	147.7	512.9	131.2	121.3	305.2	313.9	511.8	91.1	313.1
	as a percentage of value added											
2019	100.0	1.7	19.2	5.4	19.0	4.8	4.5	11.3	11.6	18.9	3.4	-
	Chain-linked volumes (prices for the previous year)											
	quarter-on-quarter percentage changes											
2019 Q1	0.5	-0.3	-0.1	1.4	1.0	1.2	0.9	0.5	0.0	0.2	0.6	0.3
Q2	0.1	-0.6	-0.5	-0.3	0.1	0.7	0.9	0.4	0.4	0.2	0.3	0.4
Q3	0.3	0.1	-0.4	0.6	0.3	1.5	0.6	0.4	0.3	0.3	0.1	0.8
Q4	0.1	0.3	-0.7	-0.2	0.3	1.1	0.2	0.4	0.3	0.4	-0.5	-0.1
	annual percentage changes											
2017	2.6	0.7	3.3	2.6	2.9	5.4	1.1	0.6	4.4	1.6	1.5	2.4
2018	2.0	1.4	1.8	3.3	2.1	4.5	1.4	1.6	3.3	1.0	0.4	1.6
2019	1.2	-0.5	-1.1	3.0	1.8	4.2	2.1	1.7	1.7	1.1	1.1	1.5
2019 Q1	1.4	-0.5	-0.4	4.6	2.0	4.5	1.6	1.5	1.9	1.1	1.0	1.1
Q2	1.2	-1.0	-1.0	3.1	1.6	4.0	2.1	1.7	1.8	1.1	1.5	1.2
Q3	1.2	-0.1	-1.2	3.1	1.9	3.8	2.1	1.7	1.9	1.1	1.3	2.0
Q4	1.0	-0.5	-1.7	1.5	1.8	4.5	2.6	1.8	1.1	1.1	0.5	1.5
	contributions to quarter-on-quarter percentage changes in value added; percentage points											
2019 Q1	0.5	0.0	0.0	0.1	0.2	0.1	0.0	0.1	0.0	0.0	0.0	-
Q2	0.1	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	-
Q3	0.3	0.0	-0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	-
Q4	0.1	0.0	-0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	-
	contributions to annual percentage changes in value added; percentage points											
2017	2.6	0.0	0.7	0.1	0.5	0.2	0.1	0.1	0.5	0.3	0.1	-
2018	2.0	0.0	0.4	0.2	0.4	0.2	0.1	0.2	0.4	0.2	0.0	-
2019	1.2	0.0	-0.2	0.2	0.3	0.2	0.1	0.2	0.2	0.2	0.0	-
2019 Q1	1.4	0.0	-0.1	0.2	0.4	0.2	0.1	0.2	0.2	0.2	0.0	-
Q2	1.2	0.0	-0.2	0.2	0.3	0.2	0.1	0.2	0.2	0.2	0.0	-
Q3	1.2	0.0	-0.2	0.2	0.4	0.2	0.1	0.2	0.2	0.2	0.0	-
Q4	1.0	0.0	-0.3	0.1	0.3	0.2	0.1	0.2	0.1	0.2	0.0	-

Sources: Eurostat and ECB calculations.

3 Economic activity

3.3 Employment [1)]

(quarterly data seasonally adjusted; annual data unadjusted)

	Total	By employment status		By economic activity										
		Employees	Self-employed	Agriculture, forestry and fishing	Manufacturing, energy and utilities	Construction	Trade, transport, accommodation and food services	Information and communication	Finance and insurance	Real estate	Professional, business and support services	Public administration, education, health and social work	Arts, entertainment and other services
	1	2	3	4	5	6	7	8	9	10	11	12	13
Persons employed													
as a percentage of total persons employed													
2017	100.0	85.6	14.4	3.2	14.6	6.0	24.9	2.8	2.5	1.0	13.8	24.3	6.9
2018	100.0	85.8	14.2	3.1	14.6	6.0	24.9	2.9	2.4	1.0	14.0	24.2	6.8
2019	100.0	86.0	14.0	3.0	14.6	6.1	24.9	2.9	2.4	1.0	14.0	24.3	6.8
annual percentage changes													
2017	1.6	2.0	-0.7	-0.5	1.1	1.4	1.8	3.4	-1.5	1.8	3.7	1.1	1.0
2018	1.5	1.8	-0.2	-0.3	1.5	2.4	1.4	3.4	-0.9	1.7	2.8	1.2	0.4
2019	1.2	1.5	-0.2	-1.8	0.8	2.4	1.2	3.8	-0.3	1.3	1.4	1.4	0.7
2019 Q1	1.4	1.6	0.3	-0.4	1.3	3.3	1.3	4.2	-0.4	2.5	1.8	1.4	0.2
Q2	1.3	1.5	-0.1	-3.0	1.0	2.6	1.3	4.2	-0.6	1.7	1.2	1.5	0.7
Q3	1.1	1.4	-0.4	-2.0	0.7	2.2	1.0	3.7	-0.2	0.8	1.3	1.5	0.9
Q4	1.1	1.4	-0.5	-1.7	0.5	1.6	1.2	3.0	0.2	0.1	1.2	1.4	1.0
Hours worked													
as a percentage of total hours worked													
2017	100.0	80.7	19.3	4.3	15.1	6.7	25.8	3.0	2.5	1.0	13.6	21.8	6.2
2018	100.0	81.0	19.0	4.2	15.0	6.8	25.7	3.0	2.5	1.0	13.8	21.8	6.1
2019	100.0	81.3	18.7	4.1	14.9	6.8	25.7	3.1	2.4	1.0	13.8	21.9	6.1
annual percentage changes													
2017	1.2	1.7	-1.1	-1.1	0.8	1.3	1.3	3.2	-2.0	1.5	3.5	0.5	0.4
2018	1.4	1.8	-0.3	0.5	1.2	2.7	1.1	3.2	-1.2	2.4	2.8	1.3	0.4
2019	1.1	1.5	-0.4	-1.4	0.5	2.2	1.0	2.7	-0.1	1.3	1.2	1.8	0.6
2019 Q1	1.7	2.0	0.4	0.3	1.3	4.0	1.6	3.4	-0.1	1.7	1.8	1.9	0.6
Q2	1.0	1.3	-0.6	-3.0	0.4	2.7	0.9	2.8	-0.4	0.9	1.1	1.7	0.3
Q3	0.9	1.3	-0.9	-2.0	0.4	1.6	0.6	2.5	0.0	1.5	0.8	1.8	0.6
Q4	0.8	1.2	-0.7	-1.1	-0.1	0.6	0.8	2.0	0.0	0.9	0.9	1.7	1.0
Hours worked per person employed													
annual percentage changes													
2017	-0.4	-0.3	-0.4	-0.6	-0.3	-0.1	-0.5	-0.1	-0.5	-0.3	-0.2	-0.6	-0.5
2018	-0.1	0.1	-0.1	0.8	-0.2	0.3	-0.3	-0.3	-0.2	0.7	0.0	0.0	0.0
2019	-0.1	0.0	-0.3	0.4	-0.4	-0.2	-0.3	-1.0	0.2	0.0	-0.2	0.4	-0.1
2019 Q1	0.3	0.4	0.1	0.8	0.0	0.7	0.3	-0.7	0.4	-0.8	0.0	0.5	0.3
Q2	-0.3	-0.1	-0.6	-0.1	-0.6	0.0	-0.5	-1.3	0.2	-0.8	-0.1	0.2	-0.4
Q3	-0.3	-0.1	-0.5	-0.1	-0.3	-0.6	-0.5	-1.2	0.3	0.8	-0.5	0.4	-0.3
Q4	-0.3	-0.2	-0.2	0.6	-0.6	-1.0	-0.4	-1.0	-0.2	0.7	-0.3	0.3	0.0

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 [1]	Under-employ-ment, % of labour force [1]	Unemployment											Job vacancy rate [2]
			Total		Long-term unemploy-ment, % of labour force [1]	By age				By gender				
						Adult		Youth		Male		Female		
			Millions	% of labour force		Millions	% of labour force	Millions	% of labour force	Millions	% of labour force	Millions	% of labour force	% of total posts
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
% of total in 2016			100.0			81.7		18.3		52.2		47.8		
2017	162.659	4.1	14.757	9.1	4.4	12.089	8.1	2.667	18.8	7.629	8.7	7.128	9.5	1.9
2018	163.305	3.8	13.378	8.2	3.8	10.952	7.4	2.426	17.0	6.891	7.9	6.487	8.6	2.1
2019	.	.	12.415	7.6	.	10.147	6.8	2.269	15.8	6.365	7.2	6.050	7.9	2.3
2019 Q1	163.284	3.6	12.675	7.7	3.5	10.361	6.9	2.314	16.1	6.472	7.4	6.204	8.2	2.3
Q2	163.765	3.6	12.412	7.6	3.3	10.154	6.8	2.258	15.7	6.377	7.3	6.035	7.9	2.3
Q3	164.182	3.3	12.367	7.5	3.2	10.107	6.8	2.259	15.7	6.334	7.2	6.033	7.9	2.2
Q4	.	.	12.207	7.4	.	9.965	6.6	2.242	15.6	6.278	7.1	5.929	7.8	2.2
2019 Aug.	-	-	12.338	7.5	-	10.094	6.8	2.244	15.6	6.318	7.2	6.020	7.9	-
Sep.	-	-	12.341	7.5	-	10.081	6.7	2.260	15.7	6.334	7.2	6.007	7.9	-
Oct.	-	-	12.233	7.4	-	9.992	6.7	2.241	15.6	6.268	7.1	5.965	7.8	-
Nov.	-	-	12.209	7.4	-	9.965	6.6	2.245	15.6	6.272	7.1	5.937	7.8	-
Dec.	-	-	12.178	7.4	-	9.937	6.6	2.241	15.6	6.293	7.1	5.885	7.7	-
2020 Jan.	-	-	12.179	7.4	-	9.930	6.6	2.249	15.6	6.261	7.1	5.919	7.7	-

Sources: Eurostat and ECB calculations.

1) Not seasonally adjusted.

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

3.5 Short-term business statistics

	Industrial production						Con-struction produc-tion	ECB indicator on industrial new orders	Retail sales				New passenger car regis-trations
	Total (excluding construction)	Main Industrial Groupings							Total	Food, beverages, tobacco	Non-food	Fuel	
		Manu-facturing	Inter-mediate goods	Capital goods	Consumer goods	Energy							
	1	2	3	4	5	6	7	8	9	10	11	12	13
% of total in 2015	100.0	88.7	32.1	34.5	21.8	11.6	100.0	100.0	100.0	40.4	52.5	7.1	100.0
annual percentage changes													
2017	2.9	3.2	3.4	3.9	1.4	1.2	3.1	7.9	2.5	1.6	3.5	0.8	5.7
2018	0.9	1.2	0.5	1.8	1.3	-1.4	2.0	2.7	1.6	1.3	1.9	0.5	0.9
2019	-1.7	-1.7	-2.5	-2.7	1.3	-1.9	1.9	-4.3	2.3	0.8	3.5	0.9	1.8
2019 Q1	-0.5	-0.2	-0.7	-0.6	1.3	-2.8	4.7	-3.2	2.4	1.0	3.5	2.8	-3.1
Q2	-1.4	-1.5	-2.5	-2.6	1.9	-0.3	2.3	-3.6	2.2	1.2	3.0	0.4	-0.7
Q3	-2.1	-2.2	-3.3	-2.5	0.4	-2.2	1.2	-4.8	2.7	0.9	4.1	1.2	0.6
Q4	-2.8	-2.9	-3.8	-4.7	1.8	-2.2	-0.3	-5.8	1.9	0.4	3.3	-0.4	12.5
2019 Aug.	-2.7	-2.7	-3.1	-3.2	-1.1	-3.0	1.5	-5.6	2.9	1.2	4.2	1.9	-6.1
Sep.	-1.7	-1.8	-3.9	-1.4	1.5	-2.2	0.2	-4.4	2.9	0.5	4.7	0.5	14.8
Oct.	-2.6	-2.6	-3.3	-5.2	2.9	-2.8	0.8	-4.8	1.8	0.4	2.9	0.6	9.8
Nov.	-1.7	-1.9	-2.9	-2.3	1.3	-1.7	1.4	-8.0	2.4	1.6	3.5	-1.2	10.0
Dec.	-4.1	-4.5	-5.5	-6.7	1.0	-2.3	-3.7	-4.4	1.7	-0.6	3.6	-0.6	17.9
2020 Jan.	.	.	.	.	.	.	.	.	1.7	0.7	2.4	0.7	-5.8
month-on-month percentage changes (s.a.)													
2019 Aug.	0.4	0.4	0.1	0.9	0.5	0.2	-0.5	0.5	0.6	0.6	0.9	0.3	11.0
Sep.	0.0	0.2	-1.0	0.4	0.8	-0.9	0.8	0.2	-0.2	-0.8	0.0	-0.4	-17.1
Oct.	-0.9	-1.0	0.7	-2.7	0.7	-1.3	-0.7	-0.1	-0.1	0.4	-0.4	0.5	4.3
Nov.	0.0	0.0	-0.8	0.9	-0.8	1.0	0.7	-0.2	0.9	0.5	1.3	-1.2	3.5
Dec.	-2.1	-2.3	-1.7	-4.0	-1.3	-0.5	-3.1	-0.6	-1.1	-1.1	-1.1	-0.1	5.8
2020 Jan.	.	.	.	.	.	.	.	.	0.6	0.7	0.4	1.9	-13.0

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	98.7	-5.2	80.6	-11.7	-15.4	-8.6	7.3	-	51.2	52.5	53.0	52.8
2017	110.4	5.7	83.1	-5.4	-3.0	2.3	14.7	89.9	57.4	58.5	55.6	56.4
2018	111.5	6.7	83.7	-4.9	7.0	1.3	15.2	90.4	54.9	54.7	54.5	54.6
2019	103.1	-5.1	81.9	-7.1	6.4	-0.4	10.7	90.5	47.4	47.8	52.7	51.3
2019 Q1	105.8	-0.3	83.1	-7.0	8.5	-1.0	11.6	90.7	49.1	49.0	52.4	51.5
Q2	103.8	-4.0	82.2	-7.0	7.2	-0.6	11.7	90.6	47.7	48.5	53.1	51.8
Q3	102.0	-7.1	81.4	-6.8	5.1	0.0	9.7	90.4	46.4	47.0	52.8	51.2
Q4	100.6	-9.2	81.0	-7.7	4.9	-0.1	9.8	90.3	46.4	46.7	52.3	50.7
2019 Sep.	101.1	-8.7	-	-6.6	4.3	0.2	9.5	-	45.7	46.1	51.6	50.1
Oct.	100.2	-9.3	81.0	-7.6	5.2	-0.9	9.0	90.2	45.9	46.6	52.2	50.6
Nov.	100.7	-8.9	-	-7.2	3.9	-0.2	9.2	-	46.9	47.4	51.9	50.6
Dec.	100.9	-9.3	-	-8.1	5.7	0.7	11.3	-	46.3	46.1	52.8	50.9
2020 Jan.	102.6	-7.0	80.9	-8.1	5.8	-0.1	11.0	90.3	47.9	48.0	52.5	51.3
Feb.	103.5	-6.1	-	-6.6	5.3	-0.2	11.2	-	49.2	48.7	52.6	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)	Debt ratio	Real gross disposable income	Financial investment	Non-financial investment (gross)	Net worth [2]	Housing wealth	Profit share [3]	Saving ratio (net)	Debt ratio [4]	Financial investment	Non-financial investment (gross)	Financing
	Percentage of gross disposable income (adjusted) [1]		Annual percentage changes					Percentage of net value added		Percentage of GDP	Annual percentage changes		
	1	2	3	4	5	6	7	8	9	10	11	12	13
2016	12.3	94.0	2.0	1.9	5.5	3.4	3.0	35.1	7.4	79.7	4.3	5.5	2.5
2017	12.0	93.9	1.4	2.2	5.4	4.6	4.7	34.4	7.1	77.2	4.6	7.8	3.0
2018	12.3	93.6	1.8	2.1	7.1	2.4	4.5	33.8	6.0	76.6	2.3	5.4	1.7
2018 Q4	12.3	93.6	1.6	2.1	8.8	2.4	4.5	33.8	6.0	76.6	2.3	20.7	1.7
2019 Q1	12.6	93.4	2.0	2.2	7.6	3.7	4.3	33.7	6.1	76.7	2.3	7.7	1.7
Q2	12.8	93.5	2.1	2.4	4.4	4.2	4.2	33.5	5.8	77.3	1.8	16.6	1.5
Q3	13.0	93.6	2.3	2.4	4.9	5.0	4.1	33.3	5.8	78.1	2.0	0.2	1.5

Sources: ECB and Eurostat.

1) Based on four-quarter cumulated sums of saving, debt and gross disposable income (adjusted for the change in the net equity of households in pension fund reserves).

2) Financial assets (net of financial liabilities) and non-financial assets. Non-financial assets consist mainly of housing wealth (residential structures and land). They also include non-financial assets of unincorporated enterprises classified within the household sector.

3) The profit share uses net entrepreneurial income, which is broadly equivalent to current profits in business accounting.

4) Defined as consolidated loans and debt securities liabilities.

3 Economic activity

3.8 Euro area balance of payments, current and capital accounts

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

	Current account											Capital account [1]	
	Total			Goods		Services		Primary income		Secondary income			
	Credit	Debit	Balance	Credit	Debit	Credit	Debit	Credit	Debit	Credit	Debit	Credit	Debit
	1	2	3	4	5	6	7	8	9	10	11	12	13
2019 Q1	1,066.8	974.6	92.2	603.8	520.0	235.9	210.4	198.2	175.6	28.9	68.5	10.7	14.9
Q2	1,060.5	990.1	70.4	597.7	520.0	242.0	233.6	194.1	173.6	26.7	62.8	8.9	24.0
Q3	1,085.1	984.4	100.7	607.1	518.4	249.9	218.1	200.8	178.2	27.3	69.7	9.2	7.3
Q4	1,064.2	965.2	99.1	607.4	517.7	244.7	217.6	185.7	170.1	26.4	59.8	16.7	11.2
2019 July	362.3	334.0	28.3	202.1	172.7	82.7	76.9	68.4	61.1	9.1	23.2	3.6	2.6
Aug.	361.3	321.1	40.2	201.5	171.1	83.5	72.8	67.2	53.9	9.1	23.2	3.0	2.1
Sep.	361.5	329.4	32.2	203.5	174.5	83.6	68.4	65.2	63.2	9.2	23.3	2.6	2.6
Oct.	360.2	326.2	34.1	205.0	173.2	82.2	71.3	63.5	58.8	9.6	22.9	3.2	2.3
Nov.	351.6	319.2	32.4	198.3	171.5	82.0	71.5	63.0	57.4	8.4	18.7	3.2	2.5
Dec.	352.3	319.8	32.6	204.2	173.0	80.6	74.7	59.1	53.8	8.5	18.2	10.2	6.4
12-month cumulated transactions													
2019 Dec.	4,276.6	3,914.2	362.4	2,416.1	2,076.2	972.5	879.7	778.7	697.5	109.3	260.9	45.5	57.4
12-month cumulated transactions as a percentage of GDP													
2019 Dec.	35.9	32.9	3.0	20.3	17.4	8.2	7.4	6.5	5.9	0.9	2.2	0.4	0.5

1) The capital account is not seasonally adjusted.

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

(seasonally adjusted, unless otherwise indicated)

	Total (n.s.a.)		Exports (f.o.b.)					Imports (c.i.f.)					
			Total				Memo item:	Total				Memo items:	
	Exports	Imports		Intermediate goods	Capital goods	Consumption goods	Manufacturing		Intermediate goods	Capital goods	Consumption goods	Manufacturing	Oil
	1	2	3	4	5	6	7	8	9	10	11	12	13
Values (EUR billions; annual percentage changes for columns 1 and 2)													
2019 Q1	3.7	5.4	586.5	283.1	121.2	172.6	493.6	533.3	306.9	86.2	133.4	383.5	64.1
Q2	2.1	2.5	582.2	275.7	120.3	175.9	486.6	530.6	302.3	85.3	134.6	381.3	65.5
Q3	3.1	0.6	584.4	278.7	117.5	176.9	488.6	529.2	297.5	87.3	136.8	386.6	60.1
Q4	2.1	-2.1	591.8	.	.	.	495.3	526.6	.	.	.	382.8	.
2019 July	6.0	2.8	193.5	92.8	39.1	58.3	161.9	176.8	100.9	29.2	44.7	128.9	20.3
Aug.	-2.1	-3.6	195.2	93.2	39.2	59.1	163.5	175.2	98.4	28.8	45.0	128.3	20.1
Sep.	5.3	2.3	195.7	92.7	39.2	59.5	163.1	177.2	98.2	29.3	47.0	129.5	19.7
Oct.	4.4	-2.6	200.1	92.8	43.6	60.7	168.0	176.3	97.4	29.9	46.5	129.2	19.2
Nov.	-2.7	-4.3	194.9	91.6	40.3	59.1	163.8	175.8	97.7	28.6	46.3	128.6	20.2
Dec.	4.8	1.1	196.7	.	.	.	163.5	174.5	.	.	.	125.0	.
Volume indices (2000 = 100; annual percentage changes for columns 1 and 2)													
2019 Q1	-0.3	1.7	108.0	111.6	107.5	105.0	108.1	110.1	110.3	108.8	112.4	111.7	105.0
Q2	-1.5	-0.2	106.5	108.4	105.9	105.5	106.2	109.1	107.5	108.8	113.3	111.4	97.2
Q3	0.9	1.5	106.7	109.5	103.0	105.7	106.1	109.5	108.2	110.6	112.8	111.6	96.5
Q4	.	.	.	.	.	.	.	.	.	.	.	.	.
2019 June	-8.0	-4.5	106.6	109.0	105.4	105.1	107.0	109.1	106.7	109.0	113.6	112.3	98.2
July	3.6	3.3	106.2	109.4	103.5	105.0	105.9	109.9	109.4	112.0	112.0	112.6	95.1
Aug.	-4.3	-2.6	106.7	109.9	102.7	105.7	106.4	109.2	108.3	109.6	111.1	110.9	99.1
Sep.	3.3	3.8	107.0	109.3	102.9	106.3	106.1	109.3	106.9	110.2	115.3	111.3	95.5
Oct.	2.3	-1.3	109.3	109.6	113.3	108.6	109.2	108.3	106.3	109.7	113.6	110.7	92.8
Nov.	-4.3	-3.8	106.5	108.4	105.1	105.1	106.4	107.8	106.5	103.6	113.4	109.9	97.5

Sources: ECB and Eurostat.

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

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

4 Prices and costs

4.1 Harmonised Index of Consumer Prices [1)]

(annual percentage changes, unless otherwise indicated)

	Total					Total (s.a.; percentage change vis-à-vis previous period) [2)]						Administered prices	
	Index: 2015 = 100	Total		Goods	Services	Total	Processed food	Unprocessed food	Non-energy industrial goods	Energy (n.s.a.)	Services	Total HICP excluding administered prices	Administered prices
			Total excluding food and energy										
	1	2	3	4	5	6	7	8	9	10	11	12	13
% of total in 2019	100.0	100.0	70.9	55.5	44.5	100.0	14.5	4.5	26.4	10.1	44.5	87.0	13.0
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
2019	104.8	1.2	1.0	1.0	1.5	-	-	-	-	-	-	1.1	1.9
2019 Q1	103.5	1.4	1.0	1.5	1.4	0.0	0.5	0.0	0.1	-2.4	0.3	1.2	2.6
Q2	105.3	1.4	1.1	1.3	1.5	0.5	0.5	-0.2	0.1	1.6	0.7	1.3	2.4
Q3	105.1	1.0	0.9	0.7	1.3	0.2	0.5	1.4	0.1	-1.5	0.3	0.9	1.6
Q4	105.3	1.0	1.2	0.4	1.7	0.3	0.4	0.3	0.1	0.2	0.4	1.0	1.2
2019 Sep.	105.3	0.8	1.0	0.3	1.5	0.1	0.0	-0.3	0.0	0.0	0.1	0.7	1.6
Oct.	105.4	0.7	1.1	0.1	1.5	0.1	0.1	-0.2	0.0	0.4	0.2	0.7	1.1
Nov.	105.1	1.0	1.3	0.3	1.9	0.1	0.2	0.5	0.1	0.0	0.1	0.9	1.2
Dec.	105.4	1.3	1.3	1.0	1.8	0.1	0.1	0.4	0.1	0.1	0.2	1.3	1.3
2020 Jan.	104.4	1.4	1.1	1.2	1.5	0.1	0.2	0.3	0.0	0.8	-0.1	1.5	0.8
Feb. [3)]	104.6	1.2	1.2	.	1.6	0.0	0.2	1.0	0.1	-1.6	0.2	.	.

	Goods						Services					
	Food (including alcoholic beverages and tobacco)			Industrial goods			Housing		Transport	Communication	Recreation and personal care	Miscellaneous
	Total	Processed food	Unprocessed food	Total	Non-energy industrial goods	Energy		Rents				
	14	15	16	17	18	19	20	21	22	23	24	25
% of total in 2019	19.0	14.5	4.5	36.5	26.4	10.1	11.0	6.5	7.2	2.6	15.3	8.4
2017	1.8	1.5	2.4	1.5	0.3	4.9	1.3	1.2	2.1	-1.1	2.1	0.8
2018	2.2	2.1	2.3	1.9	0.3	6.4	1.2	1.2	1.5	-0.1	2.0	1.4
2019	1.8	1.9	1.4	0.5	0.3	1.1	1.4	1.3	2.0	-0.7	1.7	1.5
2019 Q1	2.0	1.9	1.9	1.3	0.3	3.9	1.2	1.2	1.3	-0.6	1.7	1.5
Q2	1.5	1.8	0.6	1.2	0.3	3.6	1.3	1.3	2.1	-1.2	2.0	1.5
Q3	1.8	1.9	1.6	0.0	0.3	-0.7	1.5	1.5	2.2	-0.8	1.1	1.5
Q4	1.8	1.9	1.6	-0.3	0.4	-2.1	1.5	1.5	2.4	-0.2	2.0	1.5
2019 Sep.	1.6	1.8	0.7	-0.3	0.2	-1.8	1.5	1.5	2.1	-0.6	1.5	1.6
Oct.	1.5	1.8	0.7	-0.7	0.3	-3.1	1.5	1.5	2.4	-0.4	1.5	1.6
Nov.	1.9	2.0	1.8	-0.6	0.4	-3.2	1.5	1.5	2.4	-0.1	2.4	1.5
Dec.	2.0	2.0	2.1	0.4	0.5	0.2	1.6	1.5	2.5	-0.1	2.1	1.5
2020 Jan.	2.1	2.0	2.3	0.8	0.3	1.9	1.6	1.5	2.0	-0.2	1.5	1.5
Feb. [3)]	2.2	2.1	2.7	.	0.5	-0.3	.	.	.	.	.	.

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 [1]										Con-struction [2]	Residential property prices [3]	Experimental indicator of commercial property prices [3]
	Total (index: 2015 = 100)	Total		Industry excluding construction and energy						Energy			
			Manu-facturing	Total	Intermediate goods	Capital goods	Consumer goods						
							Total	Food, beverages and tobacco	Non-food				
	1	2	3	4	5	6	7	8	9	10	11	12	13
% of total in 2015	100.0	100.0	77.3	72.1	28.9	20.7	22.5	16.5	5.9	27.9			
2017	100.8	3.0	3.0	2.1	3.2	0.9	1.9	2.9	0.2	5.6	2.0	4.3	4.8
2018	104.0	3.2	2.4	1.5	2.6	1.0	0.4	0.2	0.6	8.1	2.5	4.8	4.2
2019	104.7	0.7	0.6	0.7	0.1	1.5	1.0	1.1	0.8	-0.1	.	.	.
2019 Q1	105.4	3.0	1.3	1.1	1.3	1.5	0.4	-0.1	1.0	7.7	2.5	4.0	4.4
Q2	104.8	1.6	1.0	0.9	0.7	1.5	1.0	0.9	0.9	3.0	2.2	4.1	6.6
Q3	104.2	-0.6	0.0	0.5	-0.4	1.5	1.0	1.2	0.8	-4.3	1.2	3.6	.
Q4	104.4	-1.3	0.0	0.4	-1.2	1.4	1.7	2.3	0.7	-5.9	.	.	.
2019 Aug.	104.0	-0.8	-0.2	0.5	-0.4	1.5	1.0	1.3	0.8	-4.9	-	-	-
Sep.	104.2	-1.1	-0.3	0.4	-0.7	1.5	1.2	1.4	0.8	-6.1	-	-	-
Oct.	104.2	-1.9	-0.7	0.4	-1.0	1.4	1.5	1.8	0.7	-7.7	-	-	-
Nov.	104.4	-1.4	-0.3	0.3	-1.4	1.4	1.7	2.2	0.7	-6.0	-	-	-
Dec.	104.5	-0.6	0.9	0.5	-1.1	1.5	2.0	2.9	0.7	-3.8	-	-	-
2020 Jan.	104.9	-0.5	1.2	0.6	-1.0	1.3	2.1	3.0	0.7	-3.6	-	-	-

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

1) Domestic sales only.

2) Input prices for residential buildings.

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

4.3 Commodity prices and GDP deflators

(annual percentage changes, unless otherwise indicated)

	GDP deflators								Oil prices (EUR per barrel)	Non-energy commodity prices (EUR)					
	Total (s.a.; index: 2015 = 100)	Total	Domestic demand				Exports [1]	Imports [1]		Import-weighted [2]			Use-weighted [2]		
			Total	Private consump-tion	Govern-ment consump-tion	Gross fixed capital formation				Total	Food	Non-food	Total	Food	Non-food
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
% of total										100.0	45.4	54.6	100.0	50.4	49.6
2017	101.8	1.0	1.4	1.3	1.4	1.7	1.9	2.8	48.1	5.8	-3.5	16.6	6.7	-1.6	17.8
2018	103.1	1.3	1.7	1.4	1.7	2.0	1.4	2.3	60.4	-0.6	-5.8	4.3	-0.1	-5.3	5.7
2019	104.9	1.7	1.5	1.2	1.7	2.3	0.6	0.1	57.2	1.7	3.7	-0.1	2.6	7.5	-2.3
2019 Q1	104.2	1.6	1.8	1.2	1.8	2.7	1.1	1.5	55.6	3.1	3.4	2.8	3.9	5.1	2.7
Q2	104.7	1.7	1.7	1.6	1.7	2.1	1.0	0.9	61.0	-1.8	-0.7	-2.8	-0.1	4.7	-4.9
Q3	105.1	1.7	1.3	1.1	1.6	2.2	0.1	-1.1	55.7	1.8	3.7	0.2	1.7	6.5	-3.1
Q4	105.6	1.8	1.3	1.0	1.6	2.3	0.2	-0.9	56.5	3.7	8.7	-0.6	5.1	13.7	-3.6
2019 Sep.	-	-	-	-	-	-	-	-	56.6	4.1	6.9	1.7	3.5	9.0	-2.0
Oct.	-	-	-	-	-	-	-	-	53.7	1.1	5.1	-2.4	1.9	9.4	-5.4
Nov.	-	-	-	-	-	-	-	-	56.8	3.8	9.9	-1.6	6.5	17.2	-4.2
Dec.	-	-	-	-	-	-	-	-	59.3	6.4	11.2	2.2	6.8	14.4	-1.1
2020 Jan.	-	-	-	-	-	-	-	-	57.3	7.2	11.3	3.5	6.9	12.9	0.7
Feb.	-	-	-	-	-	-	-	-	50.5	2.4	8.7	-3.0	2.2	9.2	-4.9

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	4.3	-	-	-4.5	32.3	56.7	56.3	-	49.7
2017	9.3	5.2	7.1	2.8	12.9	64.6	56.3	55.1	51.6
2018	11.6	7.5	9.5	12.5	20.6	65.4	57.9	56.1	52.7
2019	4.3	7.2	9.0	7.4	18.3	48.8	57.1	50.4	52.4
2019 Q1	9.1	8.2	10.5	12.2	20.7	53.9	57.7	53.0	53.1
Q2	4.8	7.2	9.2	6.6	19.8	50.6	57.1	51.2	52.3
Q3	1.9	6.6	8.4	4.9	17.9	46.4	56.5	48.9	52.0
Q4	1.4	6.9	7.9	5.9	14.7	44.2	56.9	48.6	52.0
2019 Sep.	1.6	7.0	7.7	5.3	17.0	46.3	55.9	48.6	51.7
Oct.	1.4	6.6	8.0	5.2	16.0	43.7	57.3	48.7	52.1
Nov.	0.8	6.4	7.3	6.1	14.0	43.9	56.8	48.3	52.1
Dec.	2.1	7.9	8.4	6.4	14.1	45.0	56.7	48.9	51.8
2020 Jan.	2.9	8.6	10.4	6.8	14.9	45.6	57.6	48.6	51.8
Feb.	3.8	7.3	9.1	6.0	14.3	47.1	56.8	48.1	52.1

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

4.5 Labour cost indices

(annual percentage changes, unless otherwise indicated)

	Total (index: 2016 = 100)	Total	By component		For selected economic activities		Memo item: Indicator of negotiated wages [1]
			Wages and salaries	Employers' social contributions	Business economy	Mainly non-business economy	
	1	2	3	4	5	6	7
% of total in 2018	100.0	100.0	75.3	24.7	69.0	31.0	
2017	101.8	1.8	1.7	1.9	1.8	1.7	1.5
2018	104.2	2.3	2.3	2.6	2.5	2.1	2.0
2019	.	.	.	.	.	.	2.2
2019 Q1	99.9	2.7	2.9	2.2	2.6	3.0	2.3
Q2	110.9	2.8	2.8	2.8	2.7	3.2	2.0
Q3	103.5	2.7	2.6	2.6	2.6	2.6	2.6
Q4	.	.	.	.	.	.	2.0

Sources: Eurostat and ECB calculations.

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

4 Prices and costs

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

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

	Total (index: 2015 =100)	Total	By economic activity									
			Agriculture, forestry and fishing	Manu-facturing, energy and utilities	Con-struction	Trade, transport, accom-modation and food services	Information and commu-nication	Finance and insurance	Real estate	Professional, business and support services	Public ad-ministration, education, health and social work	Arts, enter-tainment and other services
	1	2	3	4	5	6	7	8	9	10	11	12
Unit labour costs												
2017	106.2	0.7	-0.2	-0.6	0.8	0.4	0.0	-1.4	3.4	1.7	1.4	1.1
2018	108.1	1.8	0.0	1.7	1.0	1.7	1.6	-0.7	3.4	2.2	2.3	2.5
2019	110.3	2.0	0.3	3.4	1.4	1.7	1.1	-1.0	2.6	1.5	2.6	2.2
2019 Q1	109.4	2.3	1.4	3.6	1.2	2.0	1.6	-0.7	5.0	1.8	2.6	1.7
Q2	110.0	2.1	-0.4	3.2	1.7	2.0	1.5	-1.0	3.2	1.7	2.6	2.4
Q3	110.6	1.9	-0.9	4.0	1.1	1.4	1.5	-1.2	2.2	1.3	2.6	1.7
Q4	110.9	1.7	1.2	2.9	1.6	1.2	-0.2	-1.0	0.1	1.4	2.7	2.8
Compensation per employee												
2017	111.3	1.7	1.1	1.5	1.9	1.5	2.0	1.2	2.2	2.5	1.8	1.6
2018	113.8	2.2	1.7	2.0	1.9	2.3	2.6	1.6	3.2	2.7	2.0	2.5
2019	116.1	2.0	1.6	1.5	2.0	2.2	1.6	1.4	3.0	1.9	2.3	2.5
2019 Q1	115.3	2.3	1.3	1.9	2.4	2.7	2.0	1.3	4.0	1.9	2.3	2.5
Q2	115.9	2.0	1.6	1.1	2.2	2.3	1.3	1.7	3.1	2.3	2.1	3.1
Q3	116.7	2.1	1.0	2.0	2.0	2.3	1.7	1.1	3.2	1.9	2.2	2.1
Q4	116.8	1.7	2.5	0.7	1.4	1.7	1.3	1.3	1.7	1.4	2.5	2.3
Labour productivity per person employed												
2017	104.8	0.9	1.3	2.1	1.1	1.0	2.0	2.7	-1.1	0.7	0.4	0.5
2018	105.2	0.4	1.7	0.3	0.9	0.7	1.0	2.3	-0.1	0.5	-0.3	0.0
2019	105.3	0.0	1.3	-1.9	0.6	0.6	0.4	2.4	0.4	0.3	-0.3	0.3
2019 Q1	105.5	0.0	-0.1	-1.6	1.2	0.6	0.3	2.0	-1.0	0.0	-0.3	0.8
Q2	105.3	-0.1	2.0	-2.0	0.5	0.3	-0.1	2.7	-0.1	0.6	-0.4	0.7
Q3	105.5	0.2	2.0	-1.9	0.9	0.9	0.2	2.3	0.9	0.6	-0.4	0.3
Q4	105.3	-0.1	1.2	-2.1	-0.1	0.5	1.5	2.4	1.6	-0.1	-0.3	-0.5
Compensation per hour worked												
2017	113.3	2.0	1.3	1.8	2.0	1.8	2.0	1.8	2.1	2.3	2.4	2.1
2018	115.8	2.1	1.2	2.1	1.4	2.4	2.7	1.9	2.5	2.8	2.0	2.2
2019	118.1	2.0	1.2	1.9	2.3	2.2	2.6	1.0	2.7	2.0	1.8	2.7
2019 Q1	116.7	1.8	-0.6	1.9	1.6	2.2	2.5	0.8	4.2	1.9	1.7	2.2
Q2	117.4	2.2	2.1	1.7	2.4	2.4	2.5	1.3	3.3	2.5	1.8	3.6
Q3	118.2	2.2	1.2	2.4	2.6	2.6	2.7	0.6	2.1	2.2	1.8	2.5
Q4	118.4	1.9	1.7	1.3	2.5	1.9	2.7	1.3	1.3	1.6	2.1	2.4
Hourly labour productivity												
2017	107.2	1.4	1.8	2.5	1.2	1.6	2.1	3.2	-0.9	0.9	1.0	1.0
2018	107.7	0.5	0.9	0.5	0.6	1.0	1.3	2.5	-0.8	0.5	-0.3	0.0
2019	107.8	0.1	0.9	-1.6	0.8	0.8	1.5	2.2	0.3	0.5	-0.7	0.5
2019 Q1	107.4	-0.3	-0.9	-1.6	0.5	0.4	1.1	1.6	-0.2	0.0	-0.9	0.5
Q2	107.5	0.2	2.1	-1.5	0.5	0.8	1.2	2.5	0.8	0.7	-0.7	1.1
Q3	107.6	0.4	2.0	-1.6	1.4	1.3	1.3	2.0	0.2	1.1	-0.7	0.7
Q4	107.6	0.2	0.6	-1.5	0.9	0.9	2.5	2.6	0.9	0.2	-0.5	-0.5

Sources: Eurostat and ECB calculations.

5 Money and credit

5.1 Monetary aggregates [1)]

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

	M3											
	M2							M3-M2				
	M1			M2-M1								
	Currency in circulation	Overnight deposits		Deposits with an agreed maturity of up to 2 years	Deposits redeemable at notice of up to 3 months			Repos	Money market fund shares	Debt securities with a maturity of up to 2 years		
	1	2	3	4	5	6	7	8	9	10	11	12
Outstanding amounts												
2017	1,112.0	6,638.1	7,750.1	1,196.6	2,261.8	3,458.3	11,208.5	74.4	512.0	72.6	659.1	11,867.5
2018	1,163.3	7,114.8	8,278.1	1,124.9	2,299.0	3,423.9	11,702.0	74.3	524.0	71.5	669.8	12,371.8
2019	1,219.6	7,725.1	8,944.7	1,069.3	2,365.0	3,434.2	12,379.0	78.5	531.6	9.9	620.1	12,999.0
2019 Q1	1,179.2	7,277.1	8,456.4	1,114.3	2,318.1	3,432.4	11,888.7	74.2	523.0	40.4	637.7	12,526.4
Q2	1,189.0	7,415.5	8,604.4	1,111.1	2,338.5	3,449.6	12,054.0	74.5	523.9	37.6	636.0	12,690.0
Q3	1,204.1	7,605.2	8,809.3	1,110.0	2,354.7	3,464.7	12,274.0	74.5	546.3	19.1	639.9	12,913.9
Q4	1,219.6	7,725.1	8,944.7	1,069.3	2,365.0	3,434.2	12,379.0	78.5	531.6	9.9	620.1	12,999.0
2019 Aug.	1,198.7	7,572.4	8,771.1	1,113.8	2,347.1	3,460.9	12,232.0	72.3	546.0	23.9	642.2	12,874.2
Sep.	1,204.1	7,605.2	8,809.3	1,110.0	2,354.7	3,464.7	12,274.0	74.5	546.3	19.1	639.9	12,913.9
Oct.	1,209.4	7,672.2	8,881.6	1,093.9	2,359.1	3,453.1	12,334.7	79.6	529.2	27.6	636.4	12,971.1
Nov.	1,216.8	7,716.3	8,933.1	1,081.2	2,359.5	3,440.7	12,373.8	73.4	530.6	25.6	629.6	13,003.4
Dec.	1,219.6	7,725.1	8,944.7	1,069.3	2,365.0	3,434.2	12,379.0	78.5	531.6	9.9	620.1	12,999.0
2020 Jan. [p]	1,228.3	7,747.2	8,975.5	1,062.5	2,363.5	3,426.0	12,401.5	75.8	545.7	29.4	650.9	13,052.4
Transactions												
2017	36.0	592.6	628.6	-109.5	34.5	-74.9	553.7	6.5	-10.8	-18.5	-22.7	530.9
2018	50.3	465.2	515.5	-74.0	45.1	-28.9	486.6	-0.9	12.3	-3.3	8.1	494.7
2019	56.3	604.0	660.3	-60.3	63.6	3.3	663.5	4.1	-1.8	-55.5	-53.3	610.3
2019 Q1	15.9	156.0	171.9	-13.0	19.6	6.6	178.5	-0.3	-10.2	-27.6	-38.0	140.5
Q2	9.7	143.1	152.8	-4.4	20.3	15.8	168.7	0.4	3.2	-2.4	1.3	169.9
Q3	15.1	180.8	195.9	-4.6	14.8	10.2	206.1	-0.6	21.1	-18.1	2.5	208.5
Q4	15.6	124.1	139.6	-38.3	8.9	-29.4	110.3	4.5	-16.0	-7.4	-19.0	91.3
2019 Aug.	5.0	83.1	88.1	8.2	2.8	11.1	99.2	-3.7	11.6	-12.0	-4.0	95.1
Sep.	5.3	29.7	35.0	-4.8	6.2	1.5	36.5	2.0	0.3	-4.0	-1.7	34.9
Oct.	5.4	69.9	75.3	-14.2	3.1	-11.1	64.1	5.5	-17.2	9.8	-1.9	62.2
Nov.	7.4	40.8	48.2	-14.0	0.1	-13.9	34.3	-6.5	1.4	-1.6	-6.7	27.6
Dec.	2.8	13.4	16.2	-10.0	5.7	-4.4	11.8	5.5	-0.2	-15.6	-10.4	1.5
2020 Jan. [p]	8.7	18.1	26.7	-8.6	-1.5	-10.1	16.6	-3.0	14.0	19.8	30.9	47.5
Growth rates												
2017	3.3	9.8	8.8	-8.3	1.6	-2.1	5.2	9.5	-2.1	-21.1	-3.3	4.7
2018	4.5	7.0	6.6	-6.2	2.0	-0.8	4.3	-1.3	2.4	-4.8	1.2	4.2
2019	4.8	8.5	8.0	-5.3	2.8	0.1	5.7	5.4	-0.4	-83.2	-7.9	4.9
2019 Q1	5.9	7.7	7.5	-5.3	2.6	-0.1	5.2	2.4	0.5	-41.1	-3.9	4.7
Q2	4.7	7.7	7.2	-6.1	3.0	-0.1	5.0	1.1	1.1	-38.9	-2.9	4.6
Q3	4.7	8.5	7.9	-2.6	3.0	1.1	5.9	3.0	8.7	-65.5	1.1	5.7
Q4	4.8	8.5	8.0	-5.3	2.8	0.1	5.7	5.4	-0.4	-83.2	-7.9	4.9
2019 Aug.	4.8	9.0	8.4	-3.1	2.9	0.9	6.2	-1.1	7.0	-61.6	-0.8	5.8
Sep.	4.7	8.5	7.9	-2.6	3.0	1.1	5.9	3.0	8.7	-65.5	1.1	5.7
Oct.	4.8	9.0	8.4	-4.3	2.9	0.5	6.1	10.1	3.5	-47.1	-0.5	5.7
Nov.	5.0	8.8	8.3	-4.7	2.7	0.3	5.9	-1.1	4.1	-48.8	-1.3	5.6
Dec.	4.8	8.5	8.0	-5.3	2.8	0.1	5.7	5.4	-0.4	-83.2	-7.9	4.9
2020 Jan. [p]	5.2	8.4	7.9	-5.8	2.5	-0.2	5.5	0.7	4.6	-43.0	-0.4	5.2

Source: ECB.

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

5 Money and credit

5.2 Deposits in M3 [1]

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

	Non-financial corporations [2]					Households [3]					Financial corporations other than MFIs and ICPFs [2]	Insurance corporations and pension funds	Other general government [4]
	Total	Overnight	With an agreed maturity of up to 2 years	Redeemable at notice of up to 3 months	Repos	Total	Overnight	With an agreed maturity of up to 2 years	Redeemable at notice of up to 3 months	Repos			
	1	2	3	4	5	6	7	8	9	10	11	12	13
Outstanding amounts													
2017	2,240.3	1,797.4	285.0	149.1	8.8	6,317.6	3,702.8	562.1	2,051.9	0.8	991.1	206.6	415.3
2018	2,331.4	1,898.7	277.3	147.8	7.6	6,644.9	4,035.9	517.6	2,090.1	1.4	998.2	202.9	435.5
2019	2,476.1	2,062.7	256.8	150.1	6.5	7,041.8	4,395.5	492.5	2,152.9	0.9	1,036.9	215.2	467.8
2019 Q1	2,380.2	1,956.0	270.0	148.1	6.1	6,752.8	4,126.3	514.8	2,110.4	1.4	977.7	212.8	460.2
Q2	2,406.1	1,983.7	265.3	150.0	7.1	6,846.9	4,207.9	509.7	2,127.6	1.7	1,009.5	216.6	460.4
Q3	2,450.6	2,031.0	262.2	151.4	5.9	6,964.9	4,318.1	504.5	2,141.3	1.0	1,042.2	221.3	465.5
Q4	2,476.1	2,062.7	256.8	150.1	6.5	7,041.8	4,395.5	492.5	2,152.9	0.9	1,036.9	215.2	467.8
2019 Aug.	2,462.2	2,040.3	264.4	151.0	6.6	6,927.5	4,283.2	507.2	2,135.4	1.7	1,022.8	231.5	461.5
Sep.	2,450.6	2,031.0	262.2	151.4	5.9	6,964.9	4,318.1	504.5	2,141.3	1.0	1,042.2	221.3	465.5
Oct.	2,472.4	2,052.6	260.0	151.9	7.9	6,994.8	4,349.4	500.5	2,143.3	1.7	1,048.2	223.0	466.4
Nov.	2,481.6	2,073.1	251.5	151.4	5.6	7,026.7	4,382.6	497.1	2,145.2	1.7	1,022.2	227.6	472.4
Dec.	2,476.1	2,062.7	256.8	150.1	6.5	7,041.8	4,395.5	492.5	2,152.9	0.9	1,036.9	215.2	467.8
2020 Jan. [p]	2,475.1	2,064.0	256.3	150.7	4.1	7,062.2	4,421.7	487.2	2,152.5	0.9	1,024.3	218.1	469.3
Transactions													
2017	180.7	182.4	-1.9	-0.8	0.9	254.7	304.7	-82.1	33.6	-1.5	54.9	7.2	26.7
2018	93.1	105.4	-9.7	-1.1	-1.4	326.5	324.8	-45.0	46.1	0.5	0.5	-3.9	19.1
2019	146.0	163.5	-18.8	1.8	-0.5	395.2	358.3	-25.7	63.2	-0.5	29.0	10.9	30.2
2019 Q1	46.9	54.4	-7.4	0.7	-0.9	106.7	89.7	-3.2	20.3	0.0	-24.5	9.2	24.0
Q2	29.5	30.5	-4.3	2.2	1.1	94.1	82.1	-5.1	16.7	0.3	31.7	4.0	0.0
Q3	40.4	43.6	-2.9	1.0	-1.3	116.9	109.6	-6.0	13.9	-0.6	25.0	3.9	4.4
Q4	29.3	35.0	-4.2	-2.2	0.7	77.5	76.9	-11.5	12.3	-0.2	-3.2	-6.2	1.8
2019 Aug.	31.1	30.5	-0.1	0.6	0.1	33.4	32.6	-1.6	2.5	-0.1	11.8	10.6	3.6
Sep.	-13.2	-10.4	-2.3	0.1	-0.7	37.0	34.5	-2.9	6.1	-0.7	16.8	-10.7	3.3
Oct.	24.2	24.0	-1.5	-0.4	2.1	30.1	30.4	-3.7	2.7	0.7	8.0	1.6	0.4
Nov.	7.6	19.4	-8.9	-0.5	-2.4	31.1	33.0	-3.6	1.7	0.0	-28.5	4.2	6.0
Dec.	-2.5	-8.4	6.2	-1.4	1.0	16.3	13.5	-4.2	7.9	-0.8	17.4	-12.0	-4.6
2020 Jan. [p]	-3.3	-0.3	-1.2	0.6	-2.4	19.3	25.6	-5.8	-0.5	0.0	-15.2	2.6	1.5
Growth rates													
2017	8.6	11.2	-0.7	-0.5	11.5	4.2	9.0	-12.7	1.7	-65.1	5.8	3.6	6.9
2018	4.2	5.9	-3.5	-0.7	-16.5	5.2	8.8	-8.0	2.3	67.7	0.0	-1.9	4.6
2019	6.3	8.6	-6.8	1.2	-6.8	5.9	8.9	-5.0	3.0	-36.8	2.9	5.4	6.9
2019 Q1	5.9	7.6	-2.3	0.2	-17.1	5.7	8.9	-5.6	2.9	-17.2	-2.2	0.6	10.3
Q2	5.8	7.6	-4.6	2.3	12.2	5.8	8.6	-4.9	3.1	72.0	-1.0	-1.3	7.6
Q3	6.3	8.0	-2.6	2.6	-11.8	6.3	9.3	-4.1	3.2	-10.1	3.6	4.3	6.7
Q4	6.3	8.6	-6.8	1.2	-6.8	5.9	8.9	-5.0	3.0	-36.8	2.9	5.4	6.9
2019 Aug.	7.8	9.6	-2.0	2.4	3.1	6.2	9.2	-4.0	3.0	6.1	3.2	8.9	6.2
Sep.	6.3	8.0	-2.6	2.6	-11.8	6.3	9.3	-4.1	3.2	-10.1	3.6	4.3	6.7
Oct.	7.2	9.0	-3.8	2.3	31.9	6.2	9.2	-4.1	3.1	30.9	4.2	6.6	5.9
Nov.	7.0	9.7	-8.3	2.1	-24.6	6.3	9.4	-4.2	2.9	30.5	1.2	8.8	6.0
Dec.	6.3	8.6	-6.8	1.2	-6.8	5.9	8.9	-5.0	3.0	-36.8	2.9	5.4	6.9
2020 Jan. [p]	6.1	8.3	-5.4	1.3	-41.1	5.7	8.7	-6.1	2.7	-42.5	3.3	5.2	5.7

Source: ECB.

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

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

3) Including non-profit institutions serving households.

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

5 Money and credit

5.3 Credit to euro area residents [1)]

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

	Credit to general government			Credit to other euro area residents								
					Loans						Debt securities	Equity and non-money market fund investment fund shares
					Total		To non-financial corporations [3)]	To households [4)]	To financial corporations other than MFIs and ICPFs [3)]	To insurance corporations and pension funds		
	Total	Loans	Debt securities	Total		Adjusted loans [2)]						
	1	2	3	4	5	6	7	8	9	10	11	12
Outstanding amounts												
2017	4,617.2	1,032.3	3,571.0	13,114.0	10,870.5	11,165.0	4,323.5	5,600.2	838.0	108.7	1,440.4	803.2
2018	4,676.7	1,006.2	3,659.0	13,415.9	11,122.4	11,481.3	4,404.7	5,742.0	848.9	126.8	1,517.9	775.6
2019	4,652.5	984.5	3,656.3	13,865.5	11,452.1	11,836.9	4,472.6	5,930.9	896.0	152.6	1,560.5	852.9
2019 Q1	4,662.4	1,001.5	3,649.4	13,527.0	11,201.0	11,556.6	4,426.2	5,787.7	856.3	130.7	1,527.2	798.8
Q2	4,640.2	1,000.7	3,627.8	13,640.4	11,290.6	11,665.4	4,462.4	5,825.8	870.3	132.1	1,546.7	803.2
Q3	4,696.5	999.8	3,685.1	13,775.6	11,394.4	11,762.6	4,488.5	5,876.3	883.4	146.2	1,569.8	811.5
Q4	4,652.5	984.5	3,656.3	13,865.5	11,452.1	11,836.9	4,472.6	5,930.9	896.0	152.6	1,560.5	852.9
2019 Aug.	4,707.6	1,003.8	3,692.1	13,737.0	11,388.3	11,748.3	4,505.0	5,864.6	878.3	140.4	1,545.2	803.5
Sep.	4,696.5	999.8	3,685.1	13,775.6	11,394.4	11,762.6	4,488.5	5,876.3	883.4	146.2	1,569.8	811.5
Oct.	4,665.1	1,001.9	3,651.5	13,817.4	11,423.3	11,786.6	4,502.4	5,895.0	887.1	138.9	1,560.4	833.7
Nov.	4,639.1	1,000.9	3,626.4	13,853.3	11,439.1	11,806.4	4,492.2	5,912.9	888.2	145.8	1,569.9	844.3
Dec.	4,652.5	984.5	3,656.3	13,865.5	11,452.1	11,836.9	4,472.6	5,930.9	896.0	152.6	1,560.5	852.9
2020 Jan. [p]	4,670.3	994.0	3,664.5	13,913.3	11,511.1	11,873.1	4,482.8	5,962.6	912.3	153.5	1,547.6	854.6
Transactions												
2017	287.5	-43.7	330.6	363.2	274.2	316.0	84.9	173.2	19.7	-3.5	63.6	25.4
2018	90.3	-28.4	118.8	374.8	307.4	382.0	124.4	166.3	-1.1	17.8	88.1	-20.7
2019	-88.3	-23.5	-65.2	453.3	378.9	428.1	114.2	200.3	43.2	21.2	30.5	43.8
2019 Q1	-30.9	-5.4	-25.6	109.5	92.3	90.7	33.5	49.1	7.4	2.3	0.3	16.9
Q2	-49.5	-1.6	-48.2	123.8	105.6	126.3	50.8	38.8	17.5	-1.5	17.4	0.8
Q3	-2.6	-0.9	-1.7	128.8	102.3	105.3	27.3	52.1	9.1	13.9	19.9	6.6
Q4	-5.2	-15.6	10.2	91.2	78.7	105.8	2.7	60.4	9.2	6.5	-7.0	19.5
2019 Aug.	5.5	3.2	2.3	50.9	51.7	44.3	20.9	21.3	3.6	5.9	1.5	-2.3
Sep.	-13.8	-3.8	-10.0	38.1	6.3	18.9	-16.0	13.0	3.5	5.7	25.4	6.4
Oct.	-17.5	2.4	-19.9	33.5	36.7	35.7	18.0	20.4	5.5	-7.2	-8.6	5.4
Nov.	-9.6	-0.9	-8.9	33.9	15.6	22.3	-4.0	18.6	-5.9	6.9	9.2	9.1
Dec.	21.8	-17.1	38.9	23.9	26.4	47.8	-11.3	21.4	9.5	6.9	-7.6	5.0
2020 Jan. [p]	-9.3	9.3	-18.6	45.1	57.6	35.6	11.5	30.3	15.0	0.8	-14.5	2.0
Growth rates												
2017	6.6	-4.1	10.2	2.8	2.6	2.9	2.0	3.2	2.4	-3.2	4.6	3.2
2018	2.0	-2.8	3.4	2.9	2.8	3.4	2.9	3.0	-0.1	16.4	6.1	-2.6
2019	-1.9	-2.3	-1.8	3.4	3.4	3.7	2.6	3.5	5.1	16.2	2.0	5.6
2019 Q1	1.8	-2.4	3.0	2.8	2.7	3.3	2.6	3.1	-1.2	14.7	4.0	1.8
Q2	-0.2	-2.0	0.3	3.0	3.2	3.5	3.3	3.2	1.7	5.9	3.1	1.3
Q3	-1.1	-0.5	-1.3	3.2	3.2	3.6	2.9	3.2	3.5	14.4	3.2	2.6
Q4	-1.9	-2.3	-1.8	3.4	3.4	3.7	2.6	3.5	5.1	16.2	2.0	5.6
2019 Aug.	-0.6	-0.4	-0.7	3.1	3.5	3.8	3.5	3.3	3.1	12.9	1.1	2.1
Sep.	-1.1	-0.5	-1.3	3.2	3.2	3.6	2.9	3.2	3.5	14.4	3.2	2.6
Oct.	-1.4	-0.1	-1.7	3.2	3.3	3.7	3.1	3.3	3.8	11.0	2.0	3.4
Nov.	-1.4	-0.3	-1.7	3.2	3.2	3.6	2.6	3.3	3.6	16.2	2.9	4.2
Dec.	-1.9	-2.3	-1.8	3.4	3.4	3.7	2.6	3.5	5.1	16.2	2.0	5.6
2020 Jan. [p]	-1.9	-1.3	-2.1	3.4	3.5	3.8	2.6	3.7	4.9	16.7	1.1	5.8

Source: ECB.

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

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

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

4) Including non-profit institutions serving households.

5 Money and credit

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

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

	Non-financial corporations [2)]					Households [3)]				
	Total		Up to 1 year	Over 1 and up to 5 years	Over 5 years	Total		Loans for consumption	Loans for house purchase	Other loans
		Adjusted loans [4)]					Adjusted loans [4)]			
	1	2	3	4	5	6	7	8	9	10
Outstanding amounts										
2017	4,323.5	4,358.8	986.2	821.2	2,516.2	5,600.2	5,866.6	654.8	4,216.3	729.0
2018	4,404.7	4,490.0	993.0	844.3	2,567.3	5,742.0	6,024.0	684.6	4,352.6	704.8
2019	4,472.6	4,575.5	970.8	877.1	2,624.7	5,930.9	6,223.2	719.5	4,524.2	687.2
2019 Q1	4,426.2	4,513.7	980.2	851.6	2,594.4	5,787.7	6,066.7	694.4	4,391.2	702.1
Q2	4,462.4	4,554.0	977.6	867.2	2,617.6	5,825.8	6,114.0	705.5	4,422.3	698.0
Q3	4,488.5	4,581.7	982.0	873.5	2,633.0	5,876.3	6,164.6	711.2	4,473.5	691.6
Q4	4,472.6	4,575.5	970.8	877.1	2,624.7	5,930.9	6,223.2	719.5	4,524.2	687.2
2019 Aug.	4,505.0	4,591.9	995.8	876.3	2,632.9	5,864.6	6,150.7	711.7	4,456.6	696.3
Sep.	4,488.5	4,581.7	982.0	873.5	2,633.0	5,876.3	6,164.6	711.2	4,473.5	691.6
Oct.	4,502.4	4,592.6	983.4	878.1	2,640.9	5,895.0	6,181.6	713.3	4,492.7	689.0
Nov.	4,492.2	4,587.9	972.4	883.1	2,636.7	5,912.9	6,200.4	716.5	4,506.1	690.3
Dec.	4,472.6	4,575.5	970.8	877.1	2,624.7	5,930.9	6,223.2	719.5	4,524.2	687.2
2020 Jan. [p]	4,482.8	4,581.2	957.7	881.1	2,644.0	5,962.6	6,243.9	724.1	4,549.0	689.5
Transactions										
2017	84.9	134.8	0.6	39.1	45.2	173.2	165.1	45.0	134.0	-5.9
2018	124.4	176.4	18.7	33.4	72.4	166.3	188.8	40.2	135.7	-9.7
2019	114.2	143.8	-11.6	42.5	83.3	200.3	219.4	41.1	167.8	-8.6
2019 Q1	33.5	33.3	-11.4	10.1	34.7	49.1	49.2	10.6	39.5	-1.0
Q2	50.8	54.7	1.3	18.6	30.9	38.8	49.8	12.2	28.8	-2.2
Q3	27.3	34.0	3.6	6.3	17.3	52.1	55.7	8.5	46.2	-2.7
Q4	2.7	21.8	-5.2	7.5	0.3	60.4	64.7	9.8	53.2	-2.7
2019 Aug.	20.9	24.8	12.0	3.2	5.7	21.3	17.9	3.2	18.5	-0.4
Sep.	-16.0	-8.4	-13.5	-2.8	0.4	13.0	18.0	1.8	12.7	-1.4
Oct.	18.0	16.7	3.0	5.3	9.7	20.4	20.7	2.4	20.1	-2.1
Nov.	-4.0	3.0	-10.3	6.4	0.0	18.6	20.6	3.8	13.5	1.2
Dec.	-11.3	2.1	2.2	-4.1	-9.4	21.4	23.4	3.5	19.6	-1.8
2020 Jan. [p]	11.5	7.7	-13.8	3.3	22.1	30.3	19.5	4.1	24.8	1.3
Growth rates										
2017	2.0	3.2	0.1	5.0	1.8	3.2	2.9	7.3	3.3	-0.8
2018	2.9	4.1	1.9	4.1	2.9	3.0	3.2	6.2	3.2	-1.3
2019	2.6	3.2	-1.2	5.0	3.3	3.5	3.6	6.0	3.9	-1.2
2019 Q1	2.6	3.8	-1.3	4.5	3.4	3.1	3.3	6.0	3.5	-1.5
Q2	3.3	3.9	0.2	5.6	3.8	3.2	3.3	6.3	3.4	-1.1
Q3	2.9	3.6	-0.8	5.1	3.6	3.2	3.4	6.0	3.5	-1.4
Q4	2.6	3.2	-1.2	5.0	3.3	3.5	3.6	6.0	3.9	-1.2
2019 Aug.	3.5	4.2	0.6	5.9	3.8	3.3	3.4	6.1	3.5	-1.2
Sep.	2.9	3.6	-0.8	5.1	3.6	3.2	3.4	6.0	3.5	-1.4
Oct.	3.1	3.8	0.5	4.9	3.5	3.3	3.5	5.8	3.7	-1.6
Nov.	2.6	3.4	-1.0	4.7	3.3	3.3	3.5	5.8	3.7	-1.4
Dec.	2.6	3.2	-1.2	5.0	3.3	3.5	3.6	6.0	3.9	-1.2
2020 Jan. [p]	2.6	3.2	-1.6	5.0	3.4	3.7	3.7	6.0	4.1	-1.0

Source: ECB.

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

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

3) Including non-profit institutions serving households.

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

5 Money and credit

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

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

	MFI liabilities						MFI assets			
	Central government holdings [2)]	Longer-term financial liabilities vis-à-vis other euro area residents					Net external assets	Other		
		Total	Deposits with an agreed maturity of over 2 years	Deposits redeemable at notice of over 3 months	Debt securities with a maturity of over 2 years	Capital and reserves		Total	Repos with central counter-parties [3)]	Reverse repos to central counter-parties [3)]
	1	2	3	4	5	6	7	8	9	10
Outstanding amounts										
2017	342.7	6,771.1	1,967.5	59.8	2,017.5	2,726.2	925.9	324.1	143.5	92.5
2018	379.3	6,818.7	1,940.7	56.1	2,099.1	2,722.8	1,024.5	452.6	187.0	194.9
2019	350.3	7,060.6	1,944.2	51.3	2,156.0	2,909.1	1,481.9	410.0	178.9	187.2
2019 Q1	370.0	6,907.5	1,937.5	55.9	2,146.3	2,767.8	1,188.6	425.9	199.0	212.3
Q2	373.7	6,985.0	1,956.9	57.5	2,135.4	2,835.2	1,320.7	447.4	191.5	207.8
Q3	388.0	7,100.2	1,947.3	57.2	2,162.2	2,933.6	1,489.2	440.8	184.2	198.1
Q4	350.3	7,060.6	1,944.2	51.3	2,156.0	2,909.1	1,481.9	410.0	178.9	187.2
2019 Aug.	403.4	7,060.7	1,917.2	57.3	2,148.4	2,937.7	1,470.7	423.1	212.6	231.5
Sep.	388.0	7,100.2	1,947.3	57.2	2,162.2	2,933.6	1,489.2	440.8	184.2	198.1
Oct.	380.5	7,075.9	1,948.6	53.1	2,151.3	2,922.8	1,491.5	453.4	221.4	236.2
Nov.	369.1	7,077.7	1,951.0	52.6	2,162.6	2,911.5	1,500.9	456.9	211.8	224.8
Dec.	350.3	7,060.6	1,944.2	51.3	2,156.0	2,909.1	1,481.9	410.0	178.9	187.2
2020 Jan. [p)]	372.8	7,114.8	1,946.0	50.0	2,165.8	2,953.0	1,544.3	412.1	171.1	182.3
Transactions										
2017	39.0	-73.4	-83.5	-6.6	-71.1	87.8	-97.8	-56.4	-61.2	-28.5
2018	40.5	56.3	-37.8	-4.9	16.0	83.0	87.7	38.7	16.2	23.6
2019	-28.2	107.8	-6.1	-3.0	27.5	89.5	341.1	-16.3	-2.7	-2.5
2019 Q1	-9.1	45.5	-11.4	-0.2	37.6	19.5	127.5	-29.2	2.7	5.5
Q2	3.8	46.0	22.0	1.6	-0.6	22.9	101.3	44.1	-7.1	-4.5
Q3	14.6	11.9	-15.4	-1.0	4.8	23.6	95.7	13.1	6.9	7.4
Q4	-37.5	4.4	-1.4	-3.3	-14.3	23.4	16.6	-44.3	-5.3	-10.9
2019 Aug.	29.0	-20.8	-17.1	-0.4	-7.7	4.4	19.1	27.7	6.1	7.4
Sep.	-15.1	37.9	28.1	-0.9	3.6	7.0	20.3	13.0	-14.1	-16.3
Oct.	-7.3	-8.8	3.0	-1.5	-19.0	8.7	24.9	5.2	37.3	38.1
Nov.	-11.3	17.4	1.2	-0.6	1.7	15.1	10.7	-1.1	-9.7	-11.3
Dec.	-18.9	-4.2	-5.6	-1.3	3.0	-0.4	-18.9	-48.4	-32.8	-37.7
2020 Jan. [p)]	22.6	-6.9	-3.1	-1.3	2.6	-5.1	22.4	4.9	-7.8	-4.9
Growth rates										
2017	12.6	-1.1	-4.0	-9.6	-3.4	3.4	-	-	-29.8	-23.5
2018	11.8	0.8	-1.9	-8.1	0.8	3.1	-	-	8.1	7.7
2019	-7.4	1.6	-0.3	-5.4	1.3	3.2	-	-	-1.5	-1.5
2019 Q1	8.9	1.4	-1.7	-6.4	2.5	3.1	-	-	17.8	21.2
Q2	12.6	2.3	-0.4	-1.3	3.1	3.7	-	-	5.1	6.7
Q3	-3.2	1.9	-0.3	-0.7	2.2	3.3	-	-	6.9	11.0
Q4	-7.4	1.6	-0.3	-5.4	1.3	3.2	-	-	-1.5	-1.5
2019 Aug.	5.6	1.8	-2.2	0.4	3.4	3.5	-	-	11.9	15.6
Sep.	-3.2	1.9	-0.3	-0.7	2.2	3.3	-	-	6.9	11.0
Oct.	-2.9	1.6	-0.1	-2.8	1.1	3.2	-	-	36.4	38.9
Nov.	-4.4	1.8	0.2	-2.6	1.2	3.4	-	-	11.1	12.8
Dec.	-7.4	1.6	-0.3	-5.4	1.3	3.2	-	-	-1.5	-1.5
2020 Jan. [p)]	-1.2	1.2	-0.2	-7.1	0.6	2.7	-	-	-11.5	-10.3

Source: ECB.

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

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

3) Not adjusted for seasonal effects.

6 Fiscal developments

6.1 Deficit/surplus

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

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

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

6.2 Revenue and expenditure

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

	Revenue						Expenditure						
	Total	Current revenue				Capital revenue	Total	Current expenditure					Capital expenditure
			Direct taxes	Indirect taxes	Net social contributions				Compen-sation of employees	Intermediate consumption	Interest	Social benefits	
	1	2	3	4	5	6	7	8	9	10	11	12	13
2015	46.4	45.8	12.5	13.0	15.2	0.6	48.4	44.5	10.1	5.3	2.3	22.7	3.9
2016	46.2	45.7	12.6	13.0	15.3	0.5	47.7	44.1	10.0	5.3	2.1	22.7	3.6
2017	46.2	45.8	12.8	13.0	15.2	0.4	47.2	43.4	9.9	5.3	1.9	22.5	3.8
2018	46.5	46.0	13.0	13.0	15.2	0.5	47.0	43.3	9.9	5.3	1.8	22.3	3.7
2018 Q4	46.5	46.0	13.0	13.0	15.2	0.5	47.0	43.3	9.9	5.3	1.8	22.3	3.7
2019 Q1	46.4	46.0	12.9	13.1	15.2	0.5	47.0	43.3	9.9	5.3	1.8	22.4	3.7
Q2	46.4	46.0	12.9	13.0	15.2	0.4	47.1	43.4	9.9	5.3	1.8	22.5	3.7
Q3	46.4	45.9	12.9	13.1	15.1	0.4	47.1	43.4	9.9	5.3	1.7	22.5	3.7

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

6.3 Government debt-to-GDP ratio

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

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

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

6 Fiscal developments

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

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

	Change in debt-to-GDP ratio [2)]	Primary deficit (+)/ surplus (-)	Deficit-debt adjustment								Interest-growth differential	Memo item: Borrowing requirement
			Total	Transactions in main financial assets					Revaluation effects and other changes in volume	Other		
				Total	Currency and deposits	Loans	Debt securities	Equity and investment fund shares				
	1	2	3	4	5	6	7	8	9	10	11	12
2015	-1.9	-0.3	-0.8	-0.5	0.2	-0.3	-0.3	-0.1	0.0	-0.3	-0.8	1.2
2016	-0.8	-0.7	0.2	0.1	0.3	-0.1	0.0	0.1	0.0	0.0	-0.3	1.6
2017	-2.3	-1.0	-0.1	0.3	0.5	0.0	-0.2	0.1	-0.1	-0.3	-1.1	0.9
2018	-1.9	-1.3	0.4	0.3	0.4	-0.1	0.0	0.2	0.0	0.1	-0.9	0.8
2018 Q4	-1.9	-1.3	0.4	0.5	0.4	-0.1	0.0	0.2	0.0	-0.1	-0.9	0.8
2019 Q1	-1.3	-1.2	0.7	0.6	0.6	-0.1	0.0	0.2	0.1	0.0	-0.8	1.2
Q2	-0.9	-1.1	0.8	0.8	0.7	-0.1	0.0	0.2	0.1	0.0	-0.6	1.5
Q3	-1.1	-1.0	0.6	0.4	0.2	-0.1	0.0	0.2	0.0	0.3	-0.8	1.4

Sources: ECB for annual data; Eurostat for quarterly data.
1) Intergovernmental lending in the context of the financial crisis is consolidated except in quarterly data on the deficit-debt adjustment.
2) Calculated as the difference between the government debt-to-GDP ratios at the end of the reference period and a year earlier.

6.5 Government debt securities [1)]

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

	Debt service due within 1 year [2)]					Average residual maturity in years [3)]	Average nominal yields [4)]						
	Total	Principal		Interest			Outstanding amounts					Transactions	
			Maturities of up to 3 months		Maturities of up to 3 months		Total	Floating rate	Zero coupon	Fixed rate	Maturities of up to 1 year	Issuance	Redemption
	1	2	3	4	5	6	7	8	9	10	11	12	13
2017	12.9	11.2	4.2	1.7	0.4	7.1	2.4	1.1	-0.2	2.8	2.3	0.3	1.1
2018	12.6	11.1	3.7	1.5	0.4	7.3	2.3	1.1	-0.1	2.7	2.5	0.4	0.9
2019	12.6	11.2	3.8	1.4	0.4	7.5	2.1	1.3	-0.1	2.4	2.1	0.3	1.1
2018 Q4	12.6	11.1	3.7	1.5	0.4	7.3	2.3	1.1	-0.1	2.7	2.5	0.4	0.9
2019 Q1	12.7	11.2	3.8	1.5	0.4	7.4	2.3	1.1	0.0	2.6	2.5	0.5	1.0
Q2	12.9	11.4	3.7	1.5	0.4	7.4	2.3	1.3	0.0	2.6	2.3	0.5	0.9
Q3	13.1	11.6	3.9	1.5	0.4	7.4	2.2	1.3	-0.1	2.5	2.1	0.3	1.0
2019 Aug.	12.9	11.4	4.2	1.5	0.4	7.4	2.2	1.3	-0.1	2.6	2.3	0.4	1.1
Sep.	13.1	11.6	3.9	1.5	0.4	7.4	2.2	1.3	-0.1	2.5	2.1	0.3	1.0
Oct.	12.8	11.3	3.5	1.5	0.4	7.5	2.2	1.3	-0.1	2.5	2.1	0.3	1.2
Nov.	12.9	11.5	3.5	1.4	0.4	7.5	2.1	1.3	-0.1	2.4	2.0	0.3	1.2
Dec.	12.6	11.2	3.8	1.4	0.4	7.5	2.1	1.3	-0.1	2.4	2.1	0.3	1.1
2020 Jan.	12.6	11.2	4.2	1.4	0.4	7.5	2.1	1.3	-0.1	2.4	2.1	0.2	1.1

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

6 Fiscal developments

6.6 Fiscal developments in euro area countries

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

	Belgium	Germany	Estonia	Ireland	Greece	Spain	France	Italy	Cyprus
	1	2	3	4	5	6	7	8	9
	Government deficit (-)/surplus (+)								
2015	-2.4	0.9	0.1	-1.9	-5.6	-5.2	-3.6	-2.6	-1.0
2016	-2.4	1.2	-0.5	-0.7	0.5	-4.3	-3.5	-2.4	0.1
2017	-0.7	1.2	-0.8	-0.3	0.7	-3.0	-2.8	-2.4	1.7
2018	-0.7	1.9	-0.6	0.1	1.0	-2.5	-2.5	-2.2	-4.4
2018 Q4	-0.8	1.9	-0.6	0.1	1.0	-2.5	-2.5	-2.2	-4.4
2019 Q1	-1.1	1.8	-0.7	0.1	0.3	-2.6	-2.9	-2.2	-3.8
Q2	-1.5	1.7	-0.6	0.7	0.5	-2.9	-3.2	-2.1	-3.6
Q3	-1.7	1.6	-0.4	1.0	0.8	-2.8	-3.3	-2.1	3.7
	Government debt								
2015	105.2	72.1	10.0	76.7	175.9	99.3	95.6	135.3	107.5
2016	104.9	69.2	10.2	73.9	178.5	99.2	98.0	134.8	103.4
2017	101.8	65.3	9.3	67.8	176.2	98.6	98.4	134.1	93.9
2018	100.0	61.9	8.4	63.6	181.2	97.6	98.4	134.8	100.6
2018 Q4	102.1	61.9	8.4	63.6	181.2	97.6	98.4	134.8	100.6
2019 Q1	103.1	61.7	8.0	65.4	182.0	98.9	99.7	136.5	103.1
Q2	102.5	61.1	9.3	63.9	179.6	98.9	99.6	138.0	107.0
Q3	102.3	61.2	9.2	62.6	178.2	97.9	100.5	137.3	97.8

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

Source: Eurostat.

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