EUROPEAN CENTRAL BANK

EUROSYSTEM

# Economic Bulletin

Issue 4 / 2015

**Postal address**
60640 Frankfurt am Main
Germany

**Telephone**
+49 69 1344 0

**Website**
www.ecb.europa.eu

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



*The cut-off date for the statistics included in this issue was 2 June 2015.*

ISSN 2363-3417 (epub)
ISSN 2363-3417 (online)
EU catalogue number QB-BP-15-004-EN-E (epub)
EU catalogue number QB-BP-15-004-EN-N (online)

# CONTENTS

## ECONOMIC AND MONETARY DEVELOPMENTS



## BOXES



## ARTICLES



## STATISTICS

# ECONOMIC AND MONETARY DEVELOPMENTS

## OVERVIEW

**The Governing Council is maintaining a steady monetary policy course, firmly implementing all its monetary policy decisions.** Purchases under the expanded asset purchase programme (APP) – of €60 billion per month – are intended to run until the end of September 2016 and, in any case, until the Governing Council sees a sustained adjustment in the path of inflation that is consistent with its aim of achieving inflation rates below, but close to, 2% over the medium term. When carrying out its assessment, the Governing Council will follow its monetary policy strategy and concentrate on trends in inflation, looking through fluctuations in measured inflation in either direction if judged to be transient and to have no implication for the medium-term outlook for price stability.

**The asset purchase programmes are proceeding well and positive effects are visible.** The monetary policy measures have contributed to a broad-based easing in financial conditions, which remain very accommodative. Inflation expectations have recovered from their low mid-January levels, and borrowing conditions for households and firms have continued to evolve favourably. The effects of these measures are working their way through to the economy and will contribute further to an improvement in the economic outlook.

**In an environment of very low interest rates, money and loan growth have continued to recover.** Partly as a result of the expanded APP, monetary indicators have further strengthened and credit dynamics – while remaining subdued – have continued to improve. In April the decline in loans to non-financial corporations continued to moderate and the growth of loans to households increased slightly. These developments have been supported by a significant decrease in bank lending rates in much of the euro area since summer 2014, as well as by signs of an improvement in both the supply of and demand for bank loans. Overall, recent developments confirm that the ECB's monetary policy measures are helping to restore the proper functioning of the monetary policy transmission mechanism and easing bank lending conditions. Indeed, the April 2015 euro area bank lending survey shows that more relaxed lending conditions continue to support a further recovery in loan growth, in particular for enterprises. Moreover, increased competition between banks contributed to an easing of credit conditions in the first quarter of 2015, in tandem with a pick-up in business loan demand. In addition, as confirmed by the survey on the access to finance of enterprises in the euro area (SAFE), the improvement in credit market conditions applies not only to large firms but also to small and medium-sized enterprises (SMEs).

**A number of factors are supporting the gradual recovery in euro area economic activity and the labour market.** Real GDP increased by 0.4%, quarter on quarter, in the first quarter of 2015, after growing by 0.3% in the fourth quarter of 2014. The data indicate that the economic recovery has broadened, which can be attributed to several factors. ECB monetary policy measures are contributing to a substantial easing of broad financial conditions and facilitating access to credit, for SMEs as well as for larger firms. The progress made with fiscal consolidation and structural reforms has had a favourable effect on economic growth. Moreover, low oil prices are bolstering real disposable income and corporate profitability, supporting private consumption and investment, while the weakening of the euro's exchange rate has helped exports. In line with the broadening of the recovery, the euro area labour market has continued to improve somewhat, as reflected in gradually declining unemployment. However, unemployment is still high in the euro area as a whole as well as in many individual countries.

**Looking ahead, the recovery is expected to broaden further.** Private consumption has been the main factor behind the improvement in growth so far and should continue to benefit from increasing wage growth due to rising employment and from the positive impact of the fall in energy prices on real disposable income. In 2015, moreover, business investment is expected to become a more

important driver of the recovery, supported by strengthening domestic and external demand, the need to modernise and rebuild ageing capital stock, the accommodative monetary policy stance and stronger gross operating surpluses. In addition, export growth should benefit from the expected strengthening of the global economic recovery. At the same time, the necessary balance sheet adjustments in a number of sectors and the sluggish pace of implementation of structural reforms is likely to dampen the pick-up in activity.

**The June 2015 Eurosystem staff macroeconomic projections for the euro area[1] foresee annual real GDP increasing by 1.5% in 2015, 1.9% in 2016 and 2.0% in 2017.** Compared with the March 2015 ECB staff macroeconomic projections, the projections for real GDP growth remain virtually unchanged over the projection horizon. In the Governing Council's assessment, risks to the outlook for economic activity – while remaining on the downside – have become more balanced on account of its monetary policy decisions and oil price and exchange rate developments.

**Headline inflation appears to have bottomed out at the beginning of this year, as the downward effects of past energy price declines have receded.** According to Eurostat's flash estimate, annual HICP inflation was 0.3% in May 2015, up from 0.0% in April and a low of -0.6% in January. This pick-up stems essentially from a less negative contribution from the energy component, which in turn mainly reflects some recovery in oil prices in US dollars amplified by a further depreciation of the euro.

**Inflation rates are projected to rise later this year and to increase further in 2016 and 2017.** Towards the end of this year, the rate of change in the energy component is envisaged to be pushed up by base effects linked to the fall in oil prices in late 2014. In addition, the weaker exchange rate of the euro will exert upward pressure on inflation. Domestic price pressures should also strengthen on account of the expected closing of the output gap leading to higher wage growth and increased profit margins.

**The June 2015 Eurosystem staff macroeconomic projections for the euro area foresee annual HICP inflation at 0.3% in 2015, 1.5% in 2016 and 1.8% in 2017.** In comparison with the March 2015 ECB staff macroeconomic projections, the inflation projections have been revised upwards for 2015 and remain unchanged for 2016 and 2017. The projections are conditional on the full implementation of the ECB's monetary policy measures. The Governing Council will continue to monitor closely the risks to the outlook for price developments over the medium term. In this context, it will focus in particular on the pass-through of its monetary policy measures, as well as on geopolitical, exchange rate and energy price developments.

**Based on its regular economic and monetary analyses, and in line with its forward guidance, the Governing Council decided at its meeting on 3 June 2015 to keep the key ECB interest rates unchanged.** In the Governing Council's assessment there is a need to maintain a steady monetary policy course. The full implementation of all monetary policy measures will provide the necessary support to the euro area economy and lead to a sustained return of inflation rates towards levels below, but close to, 2% in the medium term.

1 See the article entitled "June 2015 Eurosystem staff macroeconomic projections for the euro area", published on the ECB's website on 3 June 2015.

# I EXTERNAL ENVIRONMENT

*The world economy continues to expand along an uneven recovery path. The significant fall in oil prices since last year (the recent rebound notwithstanding) is expected to boost global activity. Financing conditions also remain supportive for the global economy. In advanced economies, prospects are improving, as the headwinds of deleveraging and fiscal consolidation diminish. By contrast, conditions in some emerging markets have deteriorated, while global trade has slowed. Global inflation has declined owing to the fall in oil prices, and ample spare capacity worldwide is expected to restrain inflationary pressures.*

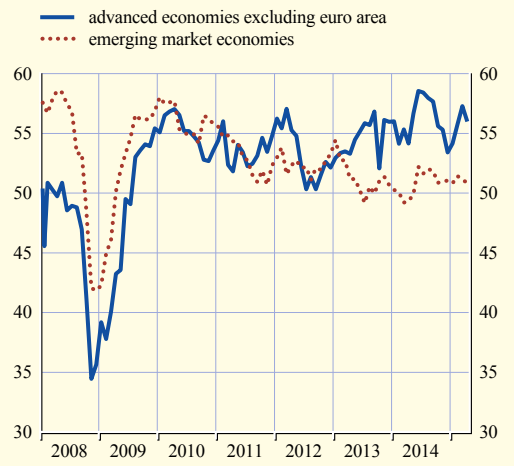
## GLOBAL ECONOMIC ACTIVITY AND TRADE

**Global growth momentum moderated in the first quarter of 2015, as the world economy continued to expand along an uneven recovery path.** Growth in advanced economies dipped as an ongoing rebound in Japan was offset by slow growth in the United States and United Kingdom. Activity in emerging markets decelerated more sharply. Weakening investment, particularly in the real estate sector, weighed on growth in China. High levels of uncertainty, declining confidence and high inflation are also dampening activity in Brazil and Russia. Some temporary factors are partly responsible for the weak global growth at the start of the year. In particular, adverse weather and disruptions to west coast ports affected activity in the United States. At the same time, survey indicators point to underlying resilience in the global economy, suggesting that the recent weakness in activity is a soft patch rather than a more fundamental slowdown (see Chart 1).

**Despite rebounding recently, oil prices are still well below the peak reached in June 2014.** Oil prices have recovered from the low reached in mid-January 2015 mainly in response to signs of a slowdown in US shale oil production, as reflected in a fall in the number of exploitation rigs. At the same time, global oil demand is gaining some momentum. Nevertheless, global supply growth and oil inventories remain high as OPEC continues to produce above its target, and the oil

**Chart 1 Global composite output PMI**

(diffusion index)




Source: Markit.
Notes: The latest observation is for April 2015. Emerging market economies are Brazil, China, India and Russia. Advanced economies are Japan, the United States and the United Kingdom.

**Chart 2 Consumer confidence in OECD countries**

(index, long-term average=100; amplitude adjusted)


Source: OECD.
Note: The latest observation is for April 2015.

market continues to be characterised by high volatility. According to the futures curve, markets have priced in a gradual rise in oil prices for the coming years.

**Lower oil prices are expected to boost global demand.** While falling oil revenues are weighing on prospects for oil exporters, oil importers are expected to benefit as lower prices boost real household incomes. On balance, the impact of lower oil prices is expected to give positive impetus to global demand. Consumer confidence has risen in advanced economies since the middle of last year (see Chart 2).

**Financing conditions continue to support the global economy.** Markets still expect only a very gradual pace of monetary tightening in the United States and United Kingdom, while the Bank of Japan has committed to continued quantitative easing. Disinflationary trends have prompted an easing of monetary policy in China, India and several other emerging economies. Brazil is alone among the major emerging market economies to have increased its policy rates, as exchange rate declines have stoked inflationary pressures. Continued accommodative monetary policies have continued to provide for loose global financing conditions. Stock markets remain generally resilient, and volatility is low. However, after falling earlier in the year, government bond yields have rebounded sharply in recent weeks. For most advanced economies, yields have remained close to the levels observed at the end of 2014, but this sharp correction has emphasised the potential medium-term risk of a further pronounced rebound in bond yields from still very low levels, which could have a significant impact on the global economy.

**Prospects in advanced economies are improving, as the headwinds that have been dampening activity since the financial crisis recede.** Although the pace has varied across countries, some progress has been made with regard to private sector deleveraging. Fiscal consolidation in advanced economies is also expected to proceed at a slower pace than in the early phases of the recovery. Labour markets continue to improve, with employment expanding at a vigorous rate in some countries and unemployment rates falling. Finally, improved availability of external finance, stronger profit growth and diminishing uncertainty all favour a broadening and strengthening of investment activity in the medium term.

**The outlook for major advanced economies is supportive of global growth.** Following the moderation in activity in the first quarter, US growth is expected to rebound throughout the remainder of this year. The past appreciation of the effective exchange rate of the US dollar will dampen export growth, and the decline in the oil price will weigh on energy sector investment. However, it is anticipated that US economic activity will be supported by stronger household spending following the boost to real incomes from lower oil prices, favourable financial conditions, and continued strengthening of the labour and housing markets. Activity in Japan is recovering after the slump following the VAT hike in April 2014, with a sharp rise in growth in the first quarter of 2015. Looking ahead, activity is expected to strengthen slowly as households benefit from the increase in real incomes provided by the lower oil price, and exports gain from the past depreciation of the Japanese yen. The UK economy softened in the first quarter of 2015, but is expected to strengthen as falling energy prices and accelerating wage growth support private consumption, while business investment recovers as demand grows and credit conditions ease.

**By contrast, the outlook in some large emerging economies has weakened.** In China, both the slowdown in the housing market and the decline in production in many heavy industries weighed on growth in the first quarter of this year. While growth will receive a near-term boost from the decline in the oil price and recent monetary easing, in the longer term the pace of expansion is expected to

slow as the political leadership tackles financial fragilities and macroeconomic imbalances. The outlook for Brazil has deteriorated, as growth has been dampened by supply-side bottlenecks, domestic imbalances, high inflation, fiscal consolidation efforts and tightening financing conditions. Russia is expected to undergo a deep recession in 2015. Notwithstanding some easing of financing conditions since March 2015, funding costs remain elevated. Uncertainty is high and business confidence weak, while lower oil revenue is expected to lead to a sharp fall in public expenditure.

**Chart 3 Volume of world trade in goods**

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


Sources: Markit, CPB and ECB calculations.
Note: The latest observation refers to May 2015 for PMI and to March 2015 for world trade.

**However, the outlook is not universally weak across emerging market economies, and net oil importing countries, in particular, are projected to sustain reasonably solid rates of expansion.** Central and eastern European countries are expected to benefit from strengthening domestic demand and brighter prospects in the euro area. Some emerging Asian economies are also expected to maintain robust rates of growth as lower oil prices boost real disposable incomes, partly offsetting the impact of lower growth in China. As discussed in Box 1, progress with structural reforms have buoyed confidence in India, with the country projected to be the fastest growing large economy in the world this year.

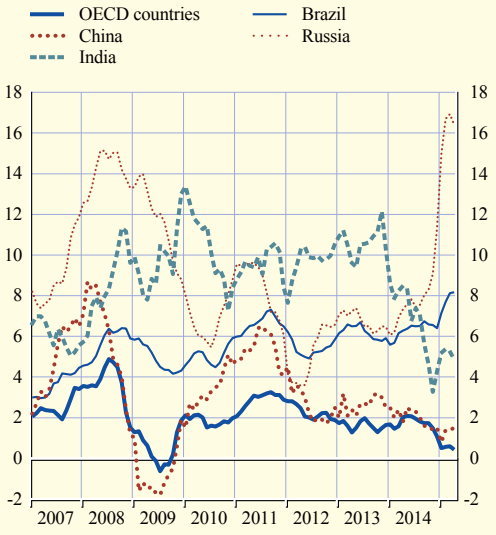
**The slower expansion in emerging market economies has dampened global trade growth.** Global merchandise trade data showed a decline of 1.6% quarter on quarter in the volume of world goods imports in the first quarter of 2015. Although a substantial share of this slowdown reflected very weak imports from China, which may partly reflect volatility around the Chinese New Year, the underlying trend appears to suggest a softer trade momentum. Survey indicators also point to somewhat weaker prospects for global trade in the near term (see Chart 3). Further ahead world trade is expected to strengthen at a moderate pace. The recovery reflects the projected expansion in global activity and an expectation that the cyclical recovery in investment, particularly in advanced economies, will raise the trade-intensity of global growth. At the same time, structural factors have affected global trade in recent years, as firms have reduced the complexity and length of their supply chains, such that global value chains are no longer supporting the expansion of global trade to the same degree as in the past. As a result, global trade is unlikely to expand in the coming years at the same pace as in previous decades.

**Overall, the near-term global recovery is anticipated to be less buoyant than previously expected.** According to the June 2015 Eurosystem staff macroeconomic projections, world annual real GDP growth (excluding the euro area) is projected to accelerate gradually from 3.4% in 2015 to just above 4% in 2016 and 2017. Euro area foreign demand is expected to accelerate from 2.2% in 2015 to around 5% by 2017. Compared with the March projections, expectations for growth and foreign demand have been revised downwards, reflecting the weaker outlook in several countries in the short term and, further ahead, slower growth in emerging market economies.

**Risks to the outlook for global trade and activity remain tilted to the downside.** On the one hand, the impact of lower oil prices on the global outlook for growth might be stronger than that embedded in the June 2015 Eurosystem staff projections. On the other hand, in the United States, markets continue to expect the pace of interest rate increases to be slower than envisaged in the latest FOMC projections. A faster normalisation of monetary policies than is currently expected by markets could trigger a reversal of risk sentiment. In emerging markets, the cyclical and structural headwinds that have been dampening activity in recent months could have a stronger and more prolonged effect than currently anticipated. In China, high credit growth and leverage pose risks to financial stability. Geopolitical risks also continue to weigh on the outlook, and a scenario in which tensions between Russia and Ukraine re-escalate would have adverse implications for global growth.

**Chart 4 Inflation in the OECD countries and selected emerging market economies**

(year-on-year percentage changes)




Sources: National sources and OECD.
Note: The latest observation refers to April 2015.

## GLOBAL PRICE DEVELOPMENTS

**Global inflation remains low, reflecting the decline in energy prices.** After declining since the middle of last year, annual consumer price inflation in OECD countries remained subdued, falling to 0.4% in April 2015. At the same time, although it fell slightly in April, annual inflation excluding food and energy has remained more stable, suggesting that broader deflationary pressures have remained more moderate. Outside the OECD countries, inflation in China and India remained subdued. By contrast, in Brazil and Russia, inflation has remained elevated as currency depreciation has led to higher import prices (see Chart 4).

**Looking ahead global inflation is expected to rise gradually.** It is anticipated that previous declines in commodity prices will contribute to low global inflation in the short term, but once these lagged effects fade out, inflation is expected to rise. Thereafter the projected pick-up in world economic activity is expected to diminish spare capacity. In addition, the oil price futures curve implies a gradual rise over the coming years, as do futures prices for non-oil commodities.

# 2 FINANCIAL DEVELOPMENTS

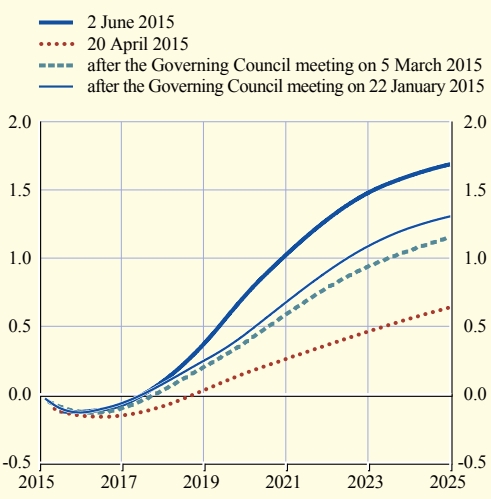
*After reaching historical lows around mid-April, yields on AAA-rated long-term government bonds returned, in early June, to the levels observed in January around the time of the announcement of the expanded asset purchase programme (APP). From a longer-term perspective, however, most euro area government bond yields remain very low across all maturities. Other financial assets have been strongly influenced by the sovereign bond markets, with corporate bond yields mirroring sovereign yields and the performance of euro area stock markets closely reflecting the decline and subsequent increase in euro area yields. The effective exchange rate of the euro has remained broadly stable over the past few months.*

**After reaching historical lows around mid-April, yields on AAA-rated long-term government bonds returned, in early June, to the levels observed in January around the time of the announcement of the expanded asset purchase programme.** In the first half of the review period – i.e. from early March to mid-April – there was a further significant compression of yields across the euro area. During that period the ten-year EONIA forward rate declined by around 50 basis points (see Chart 5), reaching a new historical low of 0.65%. In the second half of the review period – i.e. from mid-April to the beginning of June – that yield compression was more than reversed, with the ten-year EONIA forward rate increasing to around 1.70%. As short maturities remained anchored by the ECB's deposit facility rate of -0.20%, the yield curve steepened significantly. A broadly similar development was recorded for German sovereign yields, with the yield on ten-year German government bonds falling close to zero and the 30-year yield declining to around 50 basis points by mid-April (see Chart 6). By early June, both had recovered to stand at levels similar to those observed in January around the time of the announcement of the APP.

**From a longer-term perspective, however, most euro area government bond yields remain very low across all maturities, reflecting the ECB's accommodative monetary policy (including the public sector purchase programme (PSPP)).** The fact that the PSPP was widely

**Chart 5 EONIA forward curve**

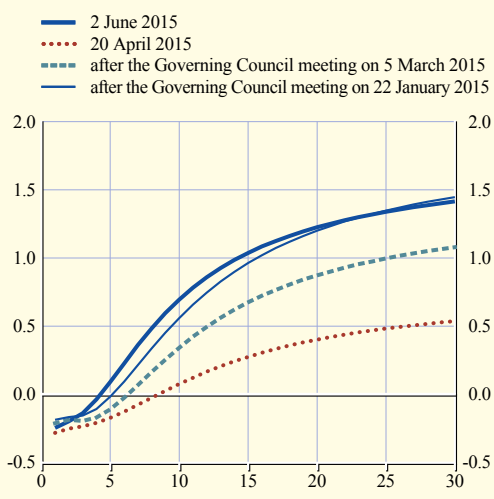
(percentages per annum)




Sources: Thomson Reuters and ECB calculations.

**Chart 6 Zero coupon yield curve for Germany**

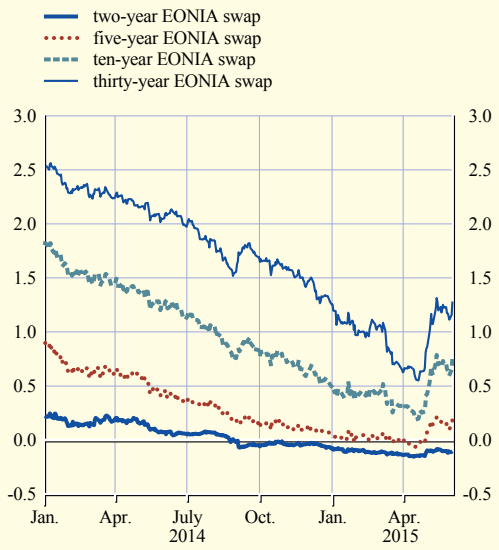
(percentages per annum)




Sources: Thomson Reuters and ECB calculations.

**Chart 7 EONIA swap rates**

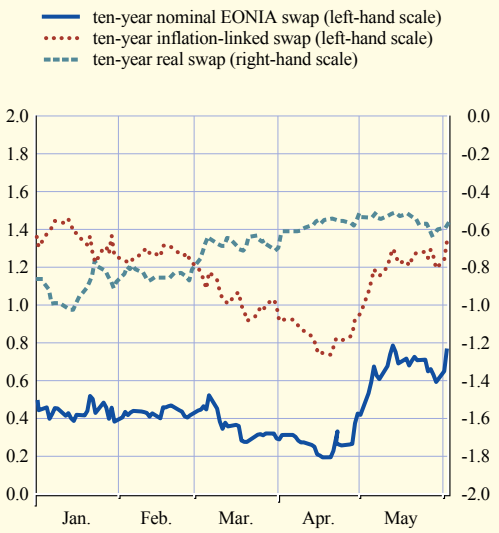
(percentages per annum)




Source: Bloomberg.
Note: The latest observation is for 2 June 2015.

**Chart 8 Euro area ten-year real, nominal and inflation-linked swap rates**

(percentages per annum)




Sources: Thomson Reuters and ECB calculations.
Notes: The ten-year real swap is derived from the ten-year EONIA swap and the ten-year inflation-linked swap. The latest observation is for 2 June 2015.

anticipated by the market well in advance of its announcement meant that there was a significant adjustment in yields before purchases even began, with longer-term EONIA swap rates declining by up to 50 basis points between end-August 2014 and the announcement of the PSPP in January (see Chart 7). The volatility observed in euro area yields after the start of purchases under the PSPP probably reflects a combination of factors, including a number of positive surprises regarding the euro area economy in the first half of the review period, technical market factors (such as supply pressures and low market liquidity) and a learning process whereby the market is adapting to the Eurosystem's large-scale purchases of public sector bonds. Between the start of PSPP purchases on 9 March and end-May the Eurosystem purchased €147 billion of public sector bonds with an average maturity of just over eight years.

**The recent volatility in yields has been associated mainly with volatility in real rates.** An accounting decomposition of changes in the ten-year EONIA swap rate shows that most of its volatility has been due to changes in the real rate, while the inflation-linked swap rate has been relatively stable (see Chart 8). Section 4 on prices and costs provides more information on inflation expectations.

**Lower-rated euro area countries saw a widening of their sovereign yield spreads relative to Germany during the review period.** That widening was driven primarily by uncertainty surrounding Greece's access to finance and increased issuance of government bonds with longer maturities in some countries. The ten-year yield spread widened by around 40 basis points in Spain and Italy and around 60 basis points in Portugal. However, from a longer-term perspective, there has been a significant and relatively steady convergence of sovereign yields across the euro area (except Greece) following the high levels observed in July 2012.

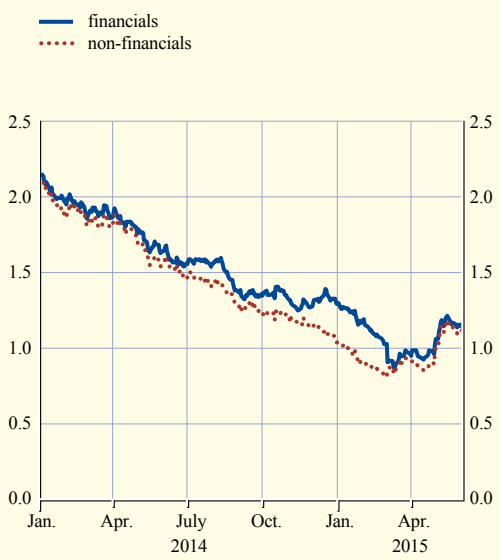
**In most countries, the other asset classes purchased under the APP – covered bonds and asset-backed securities (ABSs) – mirrored the developments for higher-rated sovereign bonds.** In some countries, however, covered bonds and ABSs were affected by the uncertainty surrounding Greece's access to finance, resulting in some increases in covered bond spreads and discount margins for ABSs.

**Corporate bonds and stocks were driven mainly by developments in sovereign bond markets.** Corporate bond yields (for both financial and non-financial issuers) declined in the first half of the review period, before increasing in the second (see Chart 9), thereby mirroring developments in the sovereign bond markets. Similarly, the euro area stock market performed strongly in the first half of the review period, with the broad-based Euro Stoxx equity price index up by around 7% by mid-April. That strong performance coincided with the decline in euro area sovereign yields, which led to a decline in the expected future cost of financing and an increase in the discounted value of expected future corporate earnings. When sovereign yields increased again, most of the stock market gains were reversed, with the Euro Stoxx equity price index rising by less than 1% over the review period as a whole. The US Standard & Poor's 500 equity price index was broadly unchanged over that period. US equity returns have outperformed euro area equity markets over the longer term (see Box 2).

**The performances of euro area financial and non-financial stocks were broadly aligned in the review period.** Since the beginning of 2014 non-financial stocks have performed significantly better than financial stocks in the euro area (see Chart 10), while US financial and non-financial stocks have performed equally well.

**Chart 9 Corporate bond yields in the euro area**

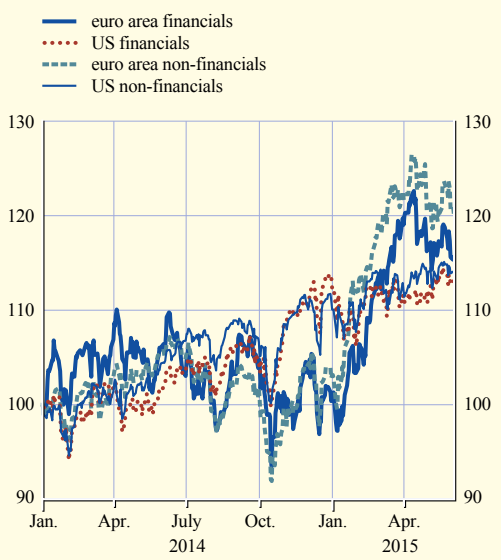
(percentages per annum)




Sources: iBoxx and ECB.
Note: The latest observation is for 2 June 2015.

**Chart 10 Financial and non-financial stock price indices**

(1 January 2014 = 100)

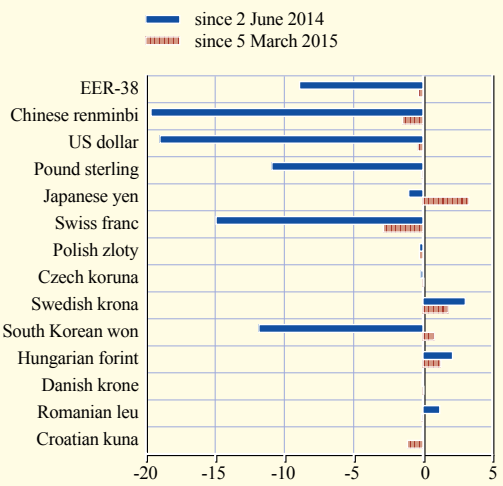



Source: Thomson Reuters.
Notes: Based on Datastream market indices. The latest observation is for 2 June 2015.

**The EONIA gradually declined amid higher levels of excess liquidity.** The higher levels of excess liquidity resulting from APP purchases and the targeted longer-term refinancing operation allotted in March triggered a gradual decline in the EONIA, which decreased from -0.06% on 5 March to -0.12% on 2 June. The spike that is usually observed in the EONIA at the end of the month was more contained than in the past, with the end-of-month fixing being negative for the first time in April. The three-month EURIBOR fixing was negative for the first time on 21 April, and it stood at -0.01% on 2 June. Box 3 looks at liquidity conditions and monetary policy operations in greater detail.

**Chart 11 Changes in the exchange rate of the euro against selected currencies**

(percentages)




Source: ECB.
Notes: Percentage changes relative to 2 June 2015. EER-38 is the nominal effective exchange rate of the euro against the currencies of 38 of the euro area's most important trading partners.

**The effective exchange rate of the euro has remained broadly stable over the past few months** (see Chart 11). Between early March and mid-April the euro broadly depreciated against other major currencies and experienced somewhat stronger volatility relative to previous months, in line with changing perceptions about the interest rate outlook for the euro area relative to other major economies. Thereafter, in the period to mid-May, the euro appreciated markedly both in effective terms and against the US dollar, thereby recovering some of its losses, amid narrowing long-term bond yield spreads between the United States and the euro area. In the second half of May, however, the euro weakened again, returning to levels similar to those of early March and standing 8.9% below the level observed one year earlier. In bilateral terms, the euro depreciated by 0.4% against the US dollar in the period from early March to 2 June. The euro also depreciated vis-à-vis the pound sterling, the Swiss franc, the Russian rouble and the Chinese renminbi. In contrast, it appreciated against the Japanese yen and the currencies of commodity-exporting countries, as well as the currencies of many emerging market economies. The Danish krone continued to trade close to its central rate within ERM II.

# 3 ECONOMIC ACTIVITY

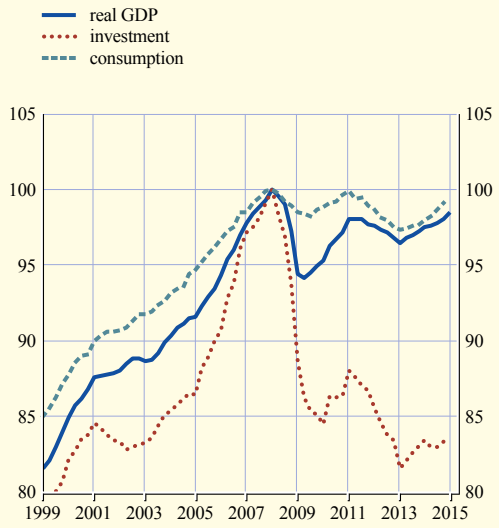
*The euro area economic recovery has continued to show a gradual firming and labour markets have improved. Moreover, a number of factors have recently provided increasing support to euro area activity. Lower oil prices are bolstering real disposable income, thus supporting private consumption. The recent depreciation of the euro exchange rate is supporting exports. The ECB's expanded asset purchase programme (APP) should contribute further to easing overall financing conditions and enhance access to credit also by small and medium-sized enterprises (SMEs). Looking forward, the cyclical recovery is expected to become more self-sustained in coming quarters, driven by both domestic and external demand, and unemployment is expected to decline further. The June 2015 Eurosystem staff macroeconomic projections for the euro area see annual real GDP increasing by 1.5% in 2015, 1.9% in 2016 and 2.0% in 2017.*

**Domestic demand strengthened in the first quarter of 2015.** Real GDP increased by 0.4%, quarter on quarter, in the first quarter of 2015, after 0.3% in the fourth quarter of 2014 (see Chart 12). Although no breakdown was available at the time of this Economic Bulletin's cut-off date, economic indicators and country data suggest that domestic demand continued to be the main driver of growth in the first quarter of 2015. It also appears that net exports made a slight negative contribution to growth, on account of relatively weak global demand from emerging markets in particular.

**Survey data point to a continued cyclical recovery in the second quarter of 2015.** The composite output Purchasing Managers Index (PMI) and the Economic Sentiment Indicator (ESI) improved between the first quarter of 2015 and the first two months of the second quarter. In addition, both indicators stood on average in April and May above their respective long-term averages.

**Chart 12 Euro area real GDP, investment and consumption**

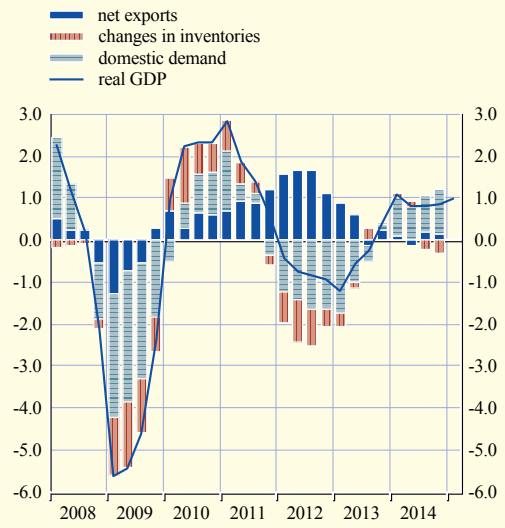
(index Q1 2008=100)




Sources: Eurostat and ECB calculations.

**Chart 13 Euro area real GDP growth and its composition**

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



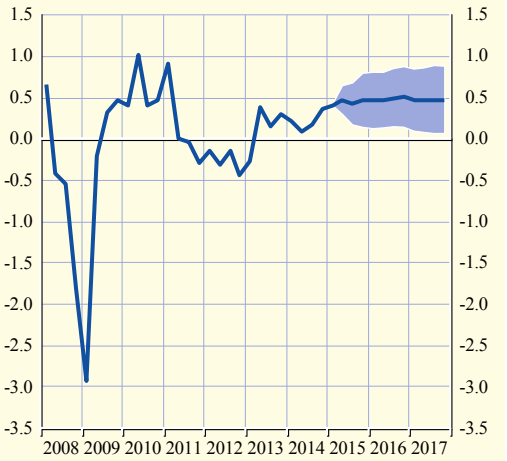

Sources: Eurostat and ECB calculations.
Notes: Data up to the fourth quarter of 2014 are neither seasonally nor working day-adjusted. GDP growth for the first quarter of 2015 is estimated using the flash estimate, which is seasonally and working day-adjusted.

**The economic recovery has maintained momentum and broadened across countries since the beginning of 2015**. First, the relatively low price of oil has contributed to a substantial increase in household real disposable income. Second, domestic demand will further benefit from the ongoing improvements in financial conditions bolstered by the accommodative monetary policy stance, as well as from the easing of credit supply conditions, as evidenced by a net easing of both credit standards and lending conditions in the latest bank lending survey for the euro area. Third, euro area activity is expected to be increasingly supported by the gradual strengthening of external demand and the depreciation of the euro. In addition, factors such as private and public balance sheet adjustments, which had contributed to the recent prolonged years of very weak real GDP growth, are gradually reversing and exerting a less negative influence on economic activity in the euro area. Furthermore, the adjustment process in housing markets is expected to have come to an end in many countries, as signalled by a turnaround in housing prices. The acceleration of GDP growth in the first quarter of the year is also estimated to have been broadly based across euro area countries.

**The assessment of a continuing economic recovery is also reflected in the June 2015 Eurosystem staff macroeconomic projections for the euro area.**[1] The economic recovery in the euro area is projected to broaden gradually over the next three years. Positive contributions to growth are expected from domestic and foreign demand. The ECB's monetary policy measures should support activity in the near and medium term, through a variety of channels. According to the June 2015 Eurosystem staff macroeconomic projections for the euro area, annual real GDP in the euro area is expected to increase by 1.5% in 2015, 1.9% in 2016 and 2.0% in 2017 (see Chart 14).

**Chart 14 Euro area real GDP (including projections)**

(quarter-on-quarter percentage changes)




Sources: Eurostat and the article entitled "June 2015 Eurosystem staff macroeconomic projections for the euro area", published on the ECB's website on 3 June 2015.
Notes: Working day-adjusted data. 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 explained in the *New procedure for constructing Eurosystem and ECB staff projection ranges*, ECB, December 2009.

**Consumption remains the main driver of growth and gained stronger momentum at the beginning of 2015.** Private consumption growth, which has been the main driver of economic recovery in the past quarters, is likely to have increased further in the first quarter of 2015, benefiting significantly from stronger growth in real disposable income reflecting lower energy prices, employment growth and less fiscal consolidation. Following quarterly growth of 0.4% in the fourth quarter of 2014, short-term indicators point to a further relatively robust increase in consumption in the first quarter of 2015. For instance, combined retail sales and car registrations for the euro area grew by 1.1%, quarter on quarter, in the first quarter of 2015 and continued to grow at a similar pace in April. Survey data point to continued resilient developments in consumer spending in the second quarter of the year. For instance,

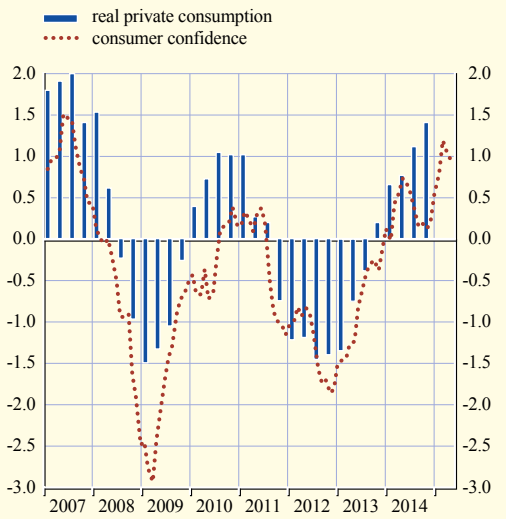
1 See the article entitled "June 2015 Eurosystem staff macroeconomic projections for the euro area", published on the ECB's website on 3 June 2015.

the European Commission's indicator for euro area consumer confidence, which provides a reasonably good steer on trend developments in private consumption, improved markedly in the first quarter of the year. Although the indicator declined somewhat in both April and May, it still stands at pre-crisis levels and well above its long-term average (see Chart 15).

**Looking forward, growth in private consumption expenditure is expected to remain a key driver of the pick-up in activity.** In the near term, private consumption should benefit from the favourable outlook for growth in real disposable income, although its momentum is expected to be dampened somewhat by the impact of the partial reversal of the decline in energy prices. Thereafter, wage income is expected to pick up on the back of steady employment growth and accelerating nominal compensation per employee.

**Chart 15 Euro area private consumption and consumer confidence**

(year-on-year percentage changes; mean-adjusted)




Sources: Eurostat, European Commission and ECB calculations.

**Investment spending has risen slightly in recent quarters.** Following the contraction in investment observed in mid-2014 – resulting from sluggish demand, corporate deleveraging and political and economic policy uncertainty – gross fixed capital formation in the euro area grew weakly in the fourth quarter of 2014, as a result of increasing construction investment, while non-construction investment remained flat. In the first quarter of 2015 euro area total investment is likely to have grown modestly, quarter on quarter, as industrial production of investment goods increased, capacity utilisation in the manufacturing industry rose markedly and confidence in the capital goods sector improved further. As for construction investment, construction production growth – albeit modest compared with the fourth quarter – and further improvements in confidence indicators point to moderate growth in the first quarter.

**Business investment growth is expected to gradually pick up.** Although, the PMI for the capital goods sector deteriorated somewhat in April and May, business investment should progressively become a more important driver of the euro area recovery in line with historical patterns. The gradual pick-up in business investment will be supported by strengthening domestic and external demand, the need to modernise and rebuild the ageing capital stock, and the accommodative monetary policy stance, substantially amplified by the non-standard monetary policy measures and especially by the expanded APP.

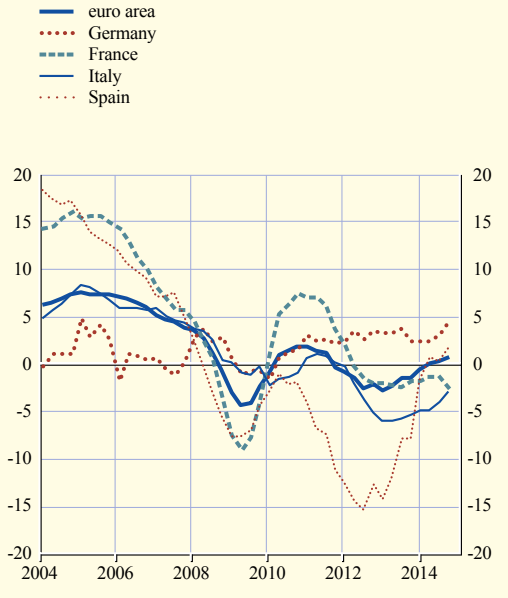
**A moderate recovery in construction investment is expected to begin in 2015**. Construction investment will start to recover in 2015 after a prolonged period of weakness, supported by very low mortgage rates in most countries, easing financing conditions, and increasing growth in disposable income. The progress in housing market adjustments in some countries as signalled by the turnaround in house prices (see Chart 16) will also bolster residential investment over time.

**Exports are estimated to have grown moderately at the beginning of 2015, adversely affected by less resilient global demand than previously anticipated.** While euro area exports of goods and services had risen by 0.8%, quarter on quarter, in the fourth quarter of 2014, a slowdown was observed in early 2015. In the first months of 2015, exports to the United States and Latin America continued to strengthen, while exports to China and other Asian economies were subdued (see Chart 17). Available survey indicators point to a rebound in euro area exports in the second quarter of 2015. Euro area exports are expected to continue to grow in the second half of 2015 and beyond, supported by a gradual strengthening of global demand and the lagged effect of the euro effective exchange rate depreciation. However, the momentum is projected to fall well short of its pre-crisis pace, reflecting both average lower global activity and lower global trade elasticity to growth. Euro area imports are expected to continue to grow in the second quarter of 2015 and to further strengthen over the medium term in line with the recovery in domestic demand. As a result, net exports are expected to make a marginally positive contribution to real GDP growth over the projection horizon. Box 4 reviews current account developments in euro area countries with large pre-crisis deficits.

**The euro area recovery is expected to take place against the background of a broadly neutral fiscal stance between 2015 and 2017.** The fiscal stance, measured as a change in the cyclically adjusted primary balance net of government assistance to the financial sector, is expected to be broadly neutral over the projection horizon. The restrictive fiscal stance in previous years was mainly the outcome of the continued moderate growth in government expenditure relative to

**Chart 16 Residential property prices**

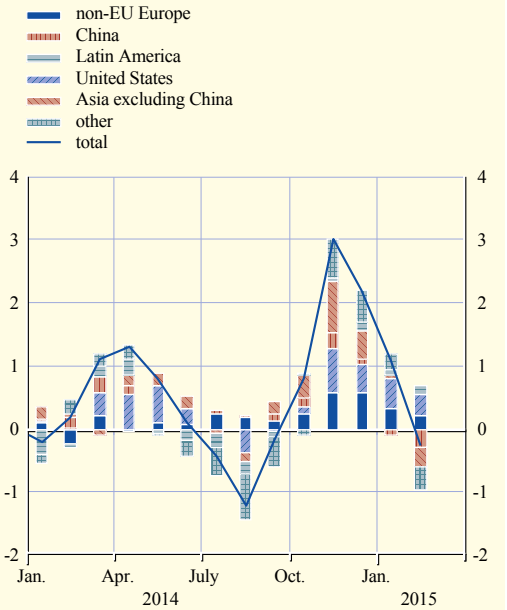
(year-on-year percentage changes)




Sources: National sources and ECB calculations.

**Chart 17 Extra euro area export volumes of goods and major trading partners**

(three-month-on-three-month percentage changes; percentage point contributions)

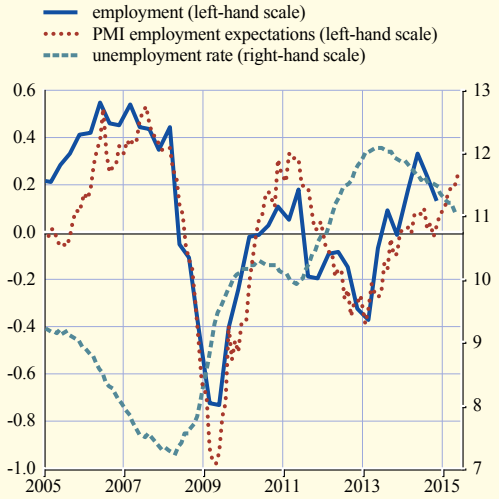



Source: Eurostat and ECB calculations.
Note: Data for the first quarter of 2015 refer to January and February only.

the trend nominal GDP growth. While this trend will continue, it will be broadly offset between 2015 and 2017 by cuts in direct taxes and social contributions. The positive impact of automatic fiscal stabilisers on domestic demand will diminish over time as the economy recovers.

**Chart 18 Euro area employment, PMI employment expectations and unemployment**

(quarter-on-quarter growth; index; percentage of labour force)




Sources: Eurostat, Markit and ECB calculations.
Note: The PMI is expressed as deviations from 50 divided by 10.

**The euro area labour market situation continues to improve gradually.** Headcount employment (see Chart 18) increased moderately, by 0.1% quarter on quarter in the fourth quarter of 2014 (the latest period for which data are available). At the sectoral level, employment growth was led by the services sector (in particular by professional services and non-market services). At the same time, employment in financial and insurance activities continued to decline, for the 11th consecutive quarter. Employment in industry excluding construction increased only moderately, while construction headcount declined considerably after a temporary increase in the third quarter. Total hours worked continued to increase in the last quarter of 2014, at a faster rate than in previous quarters. Survey results indicate a continuing improvement in employment in the first half of 2015. Forward-looking indicators also point to some further improvements in labour market conditions.

**Unemployment continued to recede gradually from elevated levels at the beginning of 2015.** The euro area unemployment rate declined to 11.2% in the first quarter of 2015, from 11.4% in the fourth quarter of 2014. Furthermore, in April 2015, the unemployment rate fell to 11.1%, its lowest level since March 2012 but still almost four percentage points higher than its pre-crisis trough. The ongoing declines in unemployment rates are visible across all groups (male and female) and across most euro area economies; nevertheless, substantial differences remain at the age group and country level.

**Looking ahead, euro area labour markets are expected to improve further over the short and medium term.** Employment growth is expected to accelerate somewhat over the coming quarters, on the back of a strengthening recovery. As a consequence, the euro area unemployment rate is expected to decline further as the recovery broadens.

**However, some factors continue to dampen the pick-up in overall activity.** Public sector indebtedness has continued to increase, albeit at a slower pace, and is expected to remain at high levels in some countries. Labour market developments – while generally improving – will remain overshadowed by high structural unemployment, notably in some countries most affected by the crisis. Both of these factors should contribute to maintaining upward pressure on precautionary savings by private households. The sluggish pace of implementation of structural reforms also continues to weigh on growth in a number of countries. Moreover, the relatively weak outlook for potential growth, the protracted uncertainty related to the Greek situation as well as geopolitical tensions outside the euro area may continue to weigh on investment spending.

**While remaining on the downside, the risks surrounding the economic outlook for the euro area have become more balanced on account of the ECB's monetary policy decisions and oil price and exchange rate developments.** Downside risks to the outlook for economic activity include a further increase of geopolitical tensions, a stronger slowdown in emerging market economies (EMEs) and a less favourable than expected impact of TLTROs and the expanded APP. Other downside risks to real GDP growth stem from a faster than expected monetary policy tightening in the United States, with adverse spillovers to some EMEs, and from a stronger than expected rebound in oil prices. These downside risks are only partly offset by the upside risks relating to a stronger than anticipated impact of structural reforms and the EU investment plans on activity.

# 4 PRICES AND COSTS

*Headline inflation bottomed out in early 2015 as the downward pressures from energy inflation receded. The June 2015 Eurosystem staff macroeconomic projections for the euro area expect inflation to average at 0.3% in 2015, but to rise significantly to 1.5% in 2016 and further to 1.8% in 2017. HICP inflation excluding energy and food is expected to rise from 0.8% in 2015 to 1.4% in 2016 and 1.7% in 2017. Risks to the outlook for price developments over the medium term will be monitored closely by the ECB's Governing Council, with a particular focus on the pass-through of the monetary policy measures, as well as geopolitical, exchange rate and energy price developments.*

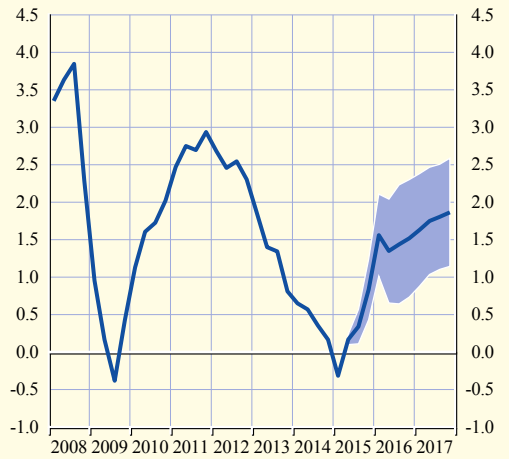
**Headline inflation for the euro area has been on an upward trajectory in recent months.** According to Eurostat's flash estimate, annual HICP inflation turned positive, reaching 0.3% in May 2015, up from 0.0% in April and a low of -0.6% in January (see Charts 19 and 22). While most of the upswing since January is explained by the less negative annual rate of change for the energy component, in turn reflecting a recovery in oil prices in euro terms, the pick-up from April to May reflects a rise in the annual rate of all main HICP components.

**HICP inflation excluding energy and food for the euro area rose from 0.6% in April to 0.9% in May.** The increase in May reflects both higher services and non-energy industrial goods inflation, with the latter having increased for the third consecutive month. This measure of underlying inflation has remained within the range of 0.6% to 1.0% since late 2013. Global factors, including the effects of the appreciation of the euro exchange rate until May 2014 and the indirect effects of the declines in oil and other commodity prices until early 2015, are still exerting downward pressure on underlying HICP inflation. Once these lagged effects fade out, the pass-through of the depreciation of the euro exchange rate into non-energy consumer prices will become more visible. On the domestic side, the ongoing weakness in consumer demand and firms' pricing power, as well as the adjustment process in certain euro area countries, also help to explain the low levels of underlying inflation.

**The impact of the depreciation of the euro on inflation should become more visible in the coming quarters.** So far, the impact has mainly been visible in import price developments, but not in domestic producer prices as yet (see Chart 20). Both the annual rate of change in import prices for non-food consumer goods and imported intermediate goods have picked up sharply. However, imported final consumer goods account for only a relatively small portion of the goods component in the HICP. Also, imported intermediate goods are to be found only in the early stages of the pricing chain and, further along that chain, producer prices for final non-food consumer goods have yet to pick up noticeably. Survey indicators for pipeline price pressures also confirm this picture. The PMI data for May show that input prices are picking up, while prices charged remained broadly stable. A delayed reaction of HICP inflation to the depreciation of the euro is normal, not only

**Chart 19 Euro area HICP inflation (including projections)**

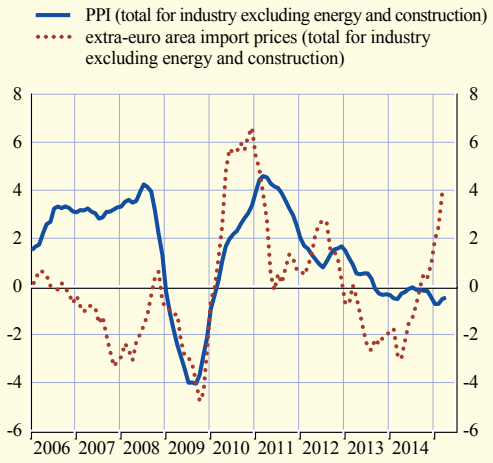
(annual percentage changes)




Sources: Eurostat and the article entitled "June 2015 Eurosystem staff macroeconomic projections for the euro area", published on the ECB's website on 3 June 2015.
Note: The latest observation refers to May 2015 (flash estimate).

**Chart 20 Producer prices and import prices for industry excluding energy and construction in the euro area**

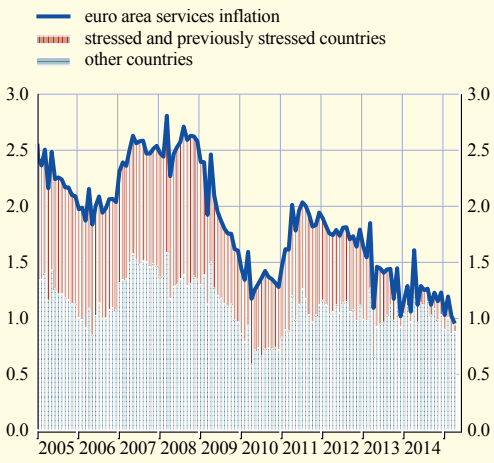
(annual percentage changes)




Sources: Eurostat and ECB calculations.
Note: The latest observations are for March 2015 for import prices and April 2015 for producer prices.

**Chart 21 Services inflation for stressed and previously stressed countries and other countries in the euro area**

(annual percentage changes; percentage point contributions)




Sources: Eurostat and ECB calculations.
Note: The latest observations are for April 2015. The stressed and previously stressed countries comprise Ireland, Greece, Spain, Italy, Cyprus, Portugal and Slovenia.

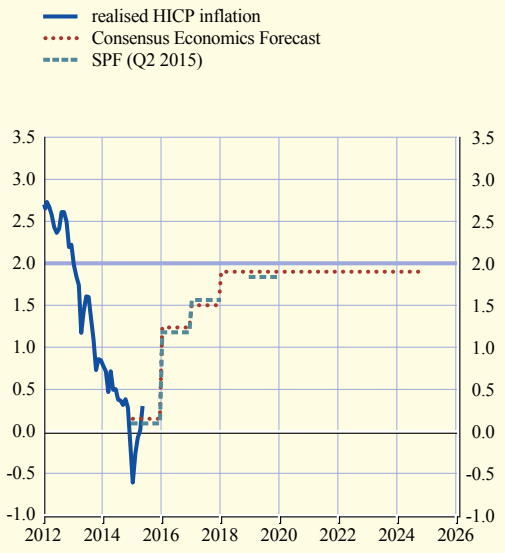
because of the gradual pass-through via higher input costs but also because some of the impact – albeit with a longer lag – will come from the higher demand for goods and services associated with the activity and income effects from the lower exchange rate. Overall, a gradual pass-through of the exchange rate depreciation is expected. Box 5 examines the exchange rate pass-through in greater detail.

**Domestic price pressures have so far remained moderate, mainly on account of weak demand.** Services price inflation declined from 1.9% in early 2012 to 1.2% in December 2014, and further to 1.0% in April 2015, before increasing to 1.3% in May. The negative trend in services price inflation in recent years has reflected subdued developments in both wage growth and profit margins, which were modestly offset by increases in indirect taxes and administered prices. From a country perspective, the decline in services price inflation has been particularly pronounced in stressed or previously stressed countries (see Chart 21). This may, on the one hand, reflect higher wage and price flexibility following structural reforms and, on the other hand, the depth of the crisis.

**Looking ahead, HICP inflation for the euro area is projected to pick up in the course of 2015 and to rise further in 2016 and 2017.** On the basis of the information available in mid-May, the June 2015 Eurosystem staff macroeconomic projections for the euro area expect HICP inflation to average 0.3% in 2015, and to rise to 1.5% in 2016 and 1.8% in 2017. Compared with the March 2015 macroeconomic projection exercise, the outlook for HICP inflation was revised up for 2015 and remained unchanged for 2016 and 2017. HICP inflation is expected to remain low in the months ahead until upward base effects, together with the expected rise in oil prices embedded in futures markets, push up headline inflation in late 2015. In 2016 and 2017 headline inflation is envisaged to rise further as domestic price pressures in the form of wage and profit-margin growth strengthen on account of the further decline in economic slack and continued upward external price pressures, which in turn reflect the lagged effects of the exchange rate channel and the upward sloping oil price futures curve.

**Chart 22 Survey-based measures of inflation expectations**

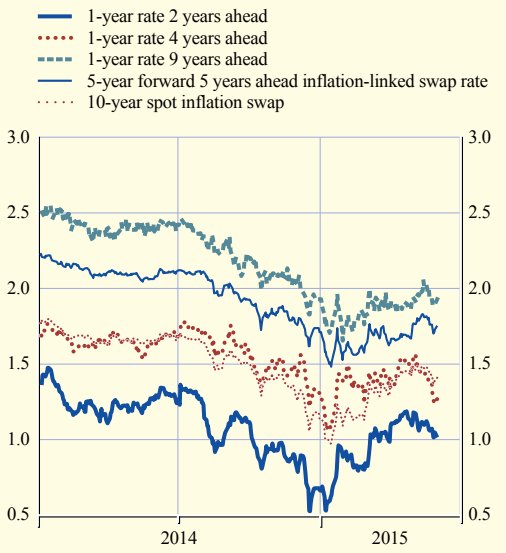
(annual percentage changes)




Sources: Eurostat, Reuters, ECB Survey of Professional Forecasters, ECB calculations, Consensus Economics.
Notes: Realised HICP data up to May 2015 (flash estimates); SPF data are based on the Q2 2015 survey results. Consensus Economics data are based on the May 2015 forecast for 2015 and 2016, and the April 2015 forecast for other years.

**Chart 23 Market-based measures of inflation expectations**

(annual percentage changes)




Sources: Thomson Reuters and ECB calculations.
Note: The latest observations are for 1 June 2015.

**The outlook for inflation is consistent with the increase in both survey and market-based measures of inflation expectations in the euro area from the low levels observed in January.** Shorter-term survey and market-based inflation expectations, as measured by inflation swap rates, have edged up recently, in particular for 2016 and 2017. The recovery in euro area longer-term survey-based inflation expectations to around 1.8% signals that professional forecasters have greater confidence that inflation will return to a level below, but close to, 2% over the medium term (see Chart 22). Also, the five-year inflation swap rate five years ahead recovered, rising from around 1.5% in January to around 1.8% at the start of June, while the ten-year spot inflation swap rate over the same period increased from below 1% to around 1.4% (see Chart 23). A similar recovery was observed for other market-based measures of inflation expectations, including break-even inflation rates derived from inflation-linked sovereign bonds from different jurisdictions. The rebound in market-based inflation expectations has been more pronounced in the euro area than in the United States and the United Kingdom, suggesting that market participants are, to some degree, reducing the downside risk that has been priced into euro area inflation expectations for some time. Overall, this implies that risks of deflationary forces or risks related to second-round effects of the recent oil price decline have receded significantly over recent months.

**Looking ahead, the Governing Council of the ECB announced that it will closely monitor the risks to the outlook for price developments over the medium term,** with a particular focus on the pass-through of the monetary policy measures, as well as geopolitical, exchange rate and energy price developments.

# 5 MONEY AND CREDIT

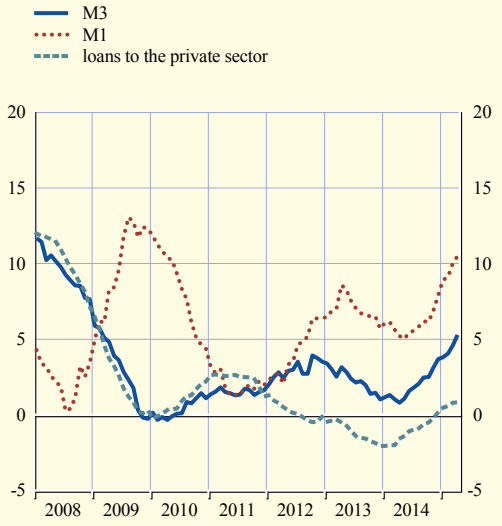
*In an environment of very low interest rates, money and loan growth have continued to recover. As a result of the expanded asset purchase programme (APP), monetary indicators have improved further. While credit dynamics have remained weak, the growth of loans to the private sector has continued to strengthen. The first quarter of 2015 saw a further decrease in banks' funding costs. Easier lending conditions are continuing to support a further recovery in loan growth, in particular for enterprises. In addition, divergences in bank lending rates across countries have narrowed further. Overall, recent developments confirm that the ECB's monetary policy measures are helping to restore the proper functioning of the monetary policy transmission mechanism and easing bank lending conditions.*

**The recovery in M3 growth has strengthened.** In April annual M3 growth increased to 5.3%, up from 4.0% in the first quarter of 2015 and the trough of 0.8% in April 2014 (see Chart 24). The increase in M3 growth was mostly driven by the narrow monetary aggregate M1, reflecting mainly the low opportunity cost of holding the most liquid components of M3. Support also came from sales of public sector bonds, covered bonds and asset-backed securities by the money-holding sector in the context of the expanded asset purchase programme (APP). Thus, annual growth in M1 accelerated further, reaching an annual rate of 10.5% in April 2015, compared with 9.0% in the first quarter of 2015. Recent developments in narrow money, which is seen as a leading indicator for euro area economic growth, support the prospect of a continued recovery in economic activity.

**Money-holders are focusing on overnight deposits.** The environment of very low interest rates and a flat yield curve are providing incentives for money-holders to invest in overnight deposits within M3. M1 made a sizeable contribution to M3 growth in April, benefiting from the elevated growth of overnight deposits held by both households and non-financial corporations (NFCs) (see Chart 25). The money-holding sector's preference for the most liquid assets, in particular overnight deposits,

**Chart 24 M3, M1 and loans to the private sector**

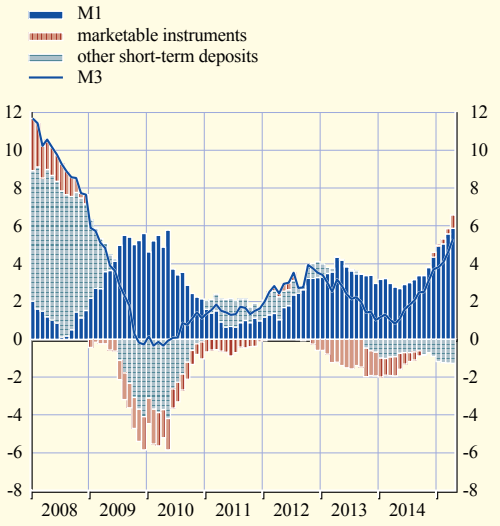
(annual percentage changes, adjusted for seasonal and calendar effects)




Source: ECB.

**Chart 25 M3 and its components**

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




Source: ECB.

points to a continued build-up of cash buffers. The low (and declining) levels of remuneration for less liquid monetary assets contributed in April to the ongoing contraction of short-term deposits other than overnight deposits. In addition, the growth rate of marketable instruments (i.e. M3 minus M2), which have a relatively small weight in M3, increased substantially and stood at 11.6% after having reached positive territory at the end of the fourth quarter of 2014. The increase was broad-based across its subcomponents.

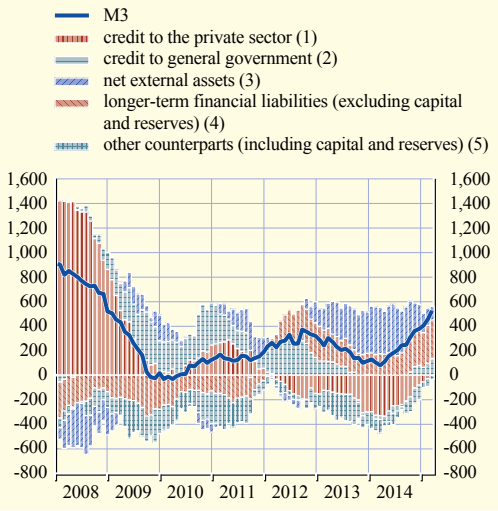
**Portfolio substitution is driving broad money growth.** An assessment of the counterparts of M3 (see Chart 26) shows that its dynamics have been driven mainly by shifts away from longer-term financial liabilities and to a lesser extent by a declining, but still positive, flow into MFIs' net external assets. The turnaround in loan dynamics has also been supportive. The annual contraction in MFIs' longer-term financial liabilities (excluding capital and reserves) held by the money-holding sector gained momentum and stood at -5.7% in the first quarter of 2015 and -6.4% in April 2015 (compared with -4.8% in the fourth quarter of 2014). Its strong contribution to M3 growth specifically reflects the flat yield curve. Relative to its peak in mid-2014, the contribution from the MFI sector's net external asset position moderated significantly in the first quarter of 2015 but still remains positive, supported by the sizeable surplus in the current account. This moderation reflects growing net portfolio outflows from the euro area in terms of debt instruments, which exceeded the rise in net portfolio inflows into the euro area in equity investments, reflecting a continued interest of foreign investors in euro area equities.

**Euro area banks' solvency and liquidity position is generally robust.** Banks have improved their capital ratios partly through higher equity issuance, but also through deleveraging and tighter lending conditions (stricter credit standards, wider spreads on loans). This emphasis on balance sheet adjustments and the marked progress in bank capital ratios have helped set the conditions for a sustained improvement in the bank lending channel of monetary policy.

**Banks' funding costs continued to decrease in the first quarter of 2015.** The reduction in bank funding costs is to a significant extent related to the expanded APP. Favourable bank financing conditions are reflected in the yields on unsecured bank bonds, which declined to historically low levels during the first quarter of 2015, falling on average to 0.8% per annum in March 2015. Banks' deposit costs also decreased further, but there is as yet no sign of a general movement into negative territory resulting from the ECB's negative deposit facility rate. Overall, the composite cost of bank funding shows a steady decline (see Chart 27), against the backdrop of net redemptions of MFIs' longer-term financial liabilities. In this context, the April 2015 euro area bank lending survey[1] showed that banks' access to funding improved in the first quarter

**Chart 26 Counterparts of M3**

(annual flows; EUR billions; adjusted for seasonal and calendar effects)

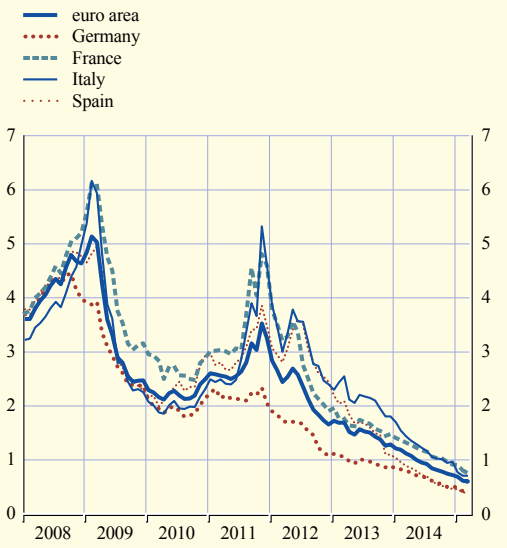



Source: ECB.
Notes: M3 is shown for reference only (M3 = 1+2+3−4+5).

1 See https://www.ecb.europa.eu/stats/money/surveys/lend/html/index.en.html.

**Chart 27 Banks' composite cost of debt financing**

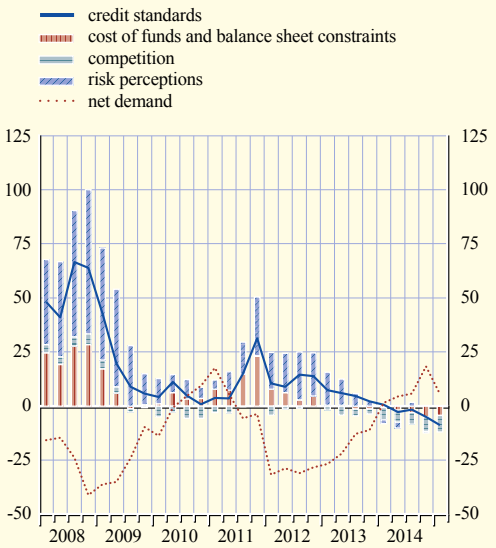
(composite cost of deposit and non-secured market debt funding; percentages per annum)




Sources: ECB, Merrill Lynch Global Index and ECB calculations.
Notes: Average of deposit rates on new business and cost of market debt funding weighted with their corresponding outstanding amounts.

**Chart 28 Factors contributing to a tightening of credit standards for loans to NFCs and net demand**

(average net percentages per category)




Source: ECB.
Notes: "Cost of funds and balance sheet constraints" are an unweighted average of "cost related to capital position", "access to market financing" and "liquidity position"; "risk perceptions" are an unweighted average of "general economic situation and outlook", "industry or firm-specific situation and outlook/borrower's creditworthiness" and "risk on collateral demanded"; and "competition" is an unweighted average of "bank competition", "non-bank competition" and "competition from market financing".

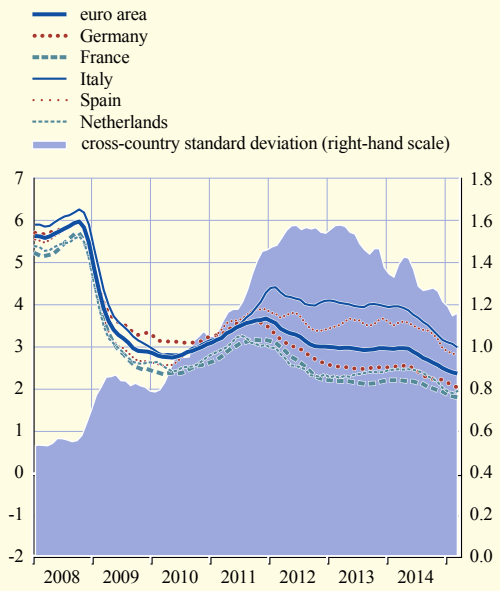
of 2015 for all main market instruments as well as for retail deposits. Compared with the previous quarter, the improvements were pronounced in all main categories, but in particular for banks' access to debt securities markets and to securitisation.

**More relaxed lending conditions continue to support a further recovery in loan growth, in particular for enterprises.** The April 2015 bank lending survey shows that increased competition between banks contributed to an easing of credit conditions in the first quarter of 2015, which coincided with an ongoing increase in firms' demand for loans (see Chart 28). Banks continued to ease their terms and conditions on new loans across all categories during the quarter, mainly driven by a further narrowing of margins on average loans. While banks eased credit standards for loans to NFCs, there was a slight net tightening of credit standards for loans to households for house purchase. In addition, as confirmed by the survey on the access to finance of enterprises (SAFE), improved credit market conditions not only apply to large firms, but also to small and medium-sized enterprises (SMEs). These positive developments are taking place in an environment where NFCs, and especially SMEs, still use market-based sources of finance less frequently than bank financing (see Box 6 "Non-bank financing for euro area NFCs during the crisis").

**Lower bank lending rates are reflecting the effect of the ECB's non-standard measures.** Significant declines in the nominal cost of bank borrowing for non-financial corporations and households have been recorded since the introduction of credit easing measures by the ECB in

**Chart 29 Composite indicator of the cost of borrowing for NFCs**

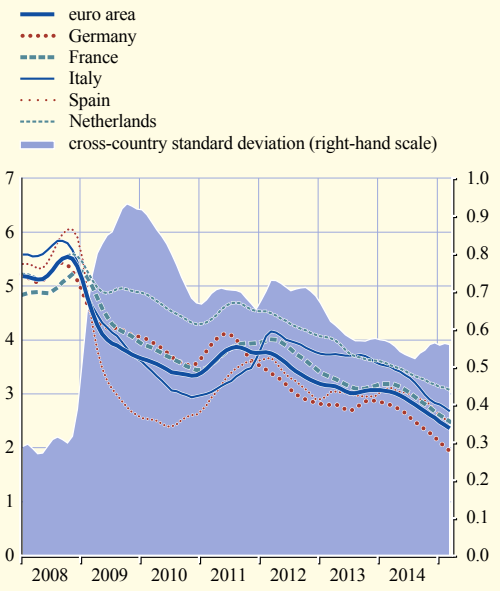
(percentages per annum; three-month moving averages)




Sources: ECB.
Notes: The indicator for the cost of 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 over a fixed sample of 12 euro area countries. Latest observation: March 2015.

**Chart 30 Composite indicator of the cost of borrowing for households for house purchase**

(percentages per annum; three-month moving averages)




Source: ECB.
Notes: The indicator for the cost of 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 over a fixed sample of 12 euro area countries. Latest observation: March 2015.

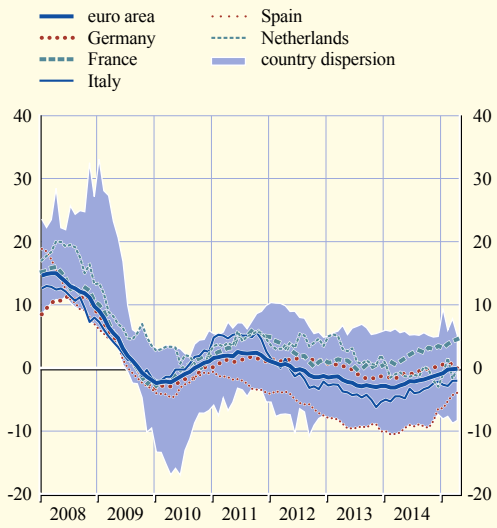
mid-2014 and the announcement of the APP. In particular, since the third quarter of 2014, when the ECB stepped up its efforts in terms of further monetary policy accommodation, banks have progressively been passing the improvement in their funding costs on in the form of lower bank lending rates: the composite costs of borrowing for households for house purchase and for non-financial corporations in the euro area have declined by around 50 basis points and 40 basis points respectively (see Charts 29 and 30).

**Divergences in bank lending rates across countries have narrowed further.** Despite some encouraging developments in credit supply conditions for the euro area as a whole, credit standards remain heterogeneous across countries and sectors. In this respect, the credit easing package adopted in June 2014 and the APP have contributed to a narrowing of the cross-country dispersion of borrowing costs. Those euro area countries presently displaying lower annual growth rates for loans to NFCs have also experienced particularly strong decreases in bank lending rates for such loans.

**Credit dynamics have remained weak, but the growth of loans to the private sector has continued to strengthen.** Adjusted for sales and securitisation, the annual growth of MFI loans to the private sector continued its recovery and increased to 0.8% in April 2015, up from 0.5% in the first quarter of 2015 and a trough of -2.1% in January 2014. In particular, the decline in loans to NFCs continued to moderate (see Chart 31), while the growth of loans to households increased slightly (see Chart 32). These developments have been supported by the significant decreases in bank lending rates which have been widespread in the euro area since summer 2014, as well as by

**Chart 31 MFI loans to NFCs in selected euro area countries**

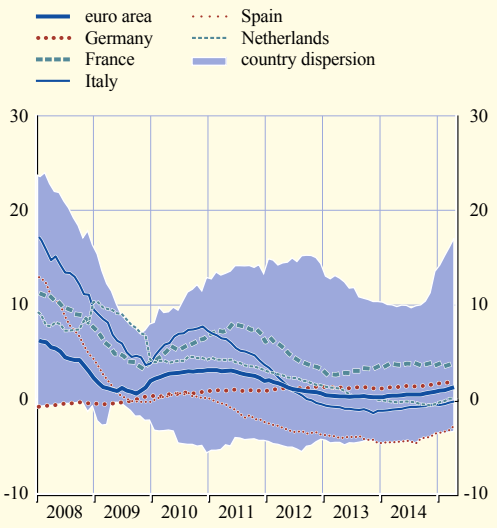
(annual rate of growth)




Source: ECB.
Notes: Adjusted for loan sales and securitisation. The country dispersion is calculated as a minimum/maximum over a fixed sample of 12 euro area countries. Latest observation: April 2015.

**Chart 32 MFI loans to households in selected euro area countries**

(annual rate of growth)




Source: ECB.
Notes: Adjusted for loan sales and securitisation. The country dispersion is calculated as a minimum/maximum over a fixed sample of 12 euro area countries. Latest observation: April 2015.

signs of an improvement in both the supply of and demand for bank loans. Although the subdued economic climate and historically tight lending conditions still weigh on loan supply in some parts of the euro area, recent editions of the euro area bank lending survey confirm the assessment that credit supply tensions are gradually receding and point to rising demand for loans.

**After recovering in 2014, the overall annual flow of external financing to non-financial corporations stabilised in the first quarter of 2015.** The recent stabilisation mostly reflects the decline in the net issuance of debt securities by NFCs observed in late summer and early autumn last year. Recent monthly data show that debt securities issuance activity increased again in early 2015, following the announcement and implementation of the public sector purchase programme (PSPP). The overall nominal cost of external financing for euro area NFCs continued to decline in the first quarter of 2015 and stabilised at low levels in March, as the increase in the cost of equity was offset by the decrease in the cost of long-term bank lending. In April and May 2015 the cost of equity remained stable on balance at pre-crisis levels. The cost of market-based debt increased in May, but to a considerably lesser degree than sovereign yields, after having reached historically low levels in March and April 2015.

# 6 FISCAL DEVELOPMENTS

*While nominal balances have improved as a result of the cyclical recovery and lower interest rates, fiscal consolidation is expected to come to a broad standstill in structural terms in the coming years. This partly reflects the fact that previously prudent fiscal policies have weakened in an environment in which fiscal rules are applied more flexibly. Looking ahead, additional consolidation efforts will be needed to set the high public debt ratio on a sustainable downward path.*

**The government balance for the euro area as a whole is expected to continue to improve.** According to the June 2015 Eurosystem staff macroeconomic projections, the general government deficit ratio for the euro area is expected to decline from 2.4% of GDP in 2014 to 1.5% of GDP in 2017 (see Table 1). The improvement is expected to stem from the cyclical impact of the ongoing economic recovery and decreasing borrowing costs. However, the structural balance is projected to remain broadly unchanged until 2017, as improvements on the expenditure side are projected to be largely compensated for by cuts in direct taxes and social contributions on the revenue side. Compared with the March 2015 projections, the outlook for the headline deficit has improved slightly on account of a downward revision of interest payments.

**Government debt is projected to decline gradually over the projection horizon, although it will remain at a high level.** The euro area debt-to-GDP ratio is projected to start declining from its peak of 92.0% of GDP in 2014 to reach 88.4% of GDP by the end of 2017. The improvement in the debt outlook, although less sizeable than projected in March, is mainly due to favourable developments in the interest rate growth differential and improved primary balances. However, the projected debt level remains elevated, underlining the need for further consolidation efforts to set the debt ratio firmly on a downward path. This is all the more important in view of substantial long-term challenges owing to the ageing population. According to the 2015 Ageing Report by the Economic Policy Committee and the European Commission, total ageing costs in the euro area are projected to increase by 1.5 percentage points of GDP to 28.3% by 2060, with much higher increases expected for several euro area countries (see Box 7 for more details).

**After a period of sizeable consolidation measures up to 2013, the fiscal stance is expected to be broadly neutral until 2017.** In view of the projected limited consolidation efforts in the euro area, gaps with respect to the structural efforts foreseen in the Stability and Growth Pact are expected to widen. Despite the likely shortfall in structural efforts, the European Commission's 2015 spring

**Table 1 Fiscal developments in the euro area**

(percentages of GDP)

| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|
| a. Total revenue | 45.9 | 46.6 | 46.7 | 46.4 | 46.0 | 45.8 |
| b. Total expenditure | 49.5 | 49.4 | 49.1 | 48.5 | 47.9 | 47.3 |
| *of which:* | | | | | | |
| c. Interest expenditure | 3.0 | 2.8 | 2.6 | 2.4 | 2.3 | 2.2 |
| d. Primary expenditure (b - c) | 46.5 | 46.6 | 46.5 | 46.0 | 45.5 | 45.1 |
| Budget balance (a - b) | -3.6 | -2.9 | -2.4 | -2.1 | -1.8 | -1.5 |
| Primary budget balance (a - d) | -0.6 | -0.1 | 0.2 | 0.4 | 0.5 | 0.7 |
| Cyclically adjusted budget balance | -3.5 | -2.2 | -1.9 | -1.7 | -1.7 | -1.4 |
| Structural balance | -3.2 | -2.2 | -1.8 | -1.7 | -1.7 | -1.4 |
| Gross debt | 89.1 | 90.9 | 92.0 | 91.5 | 90.2 | 88.4 |
| Memo item: real GDP (percentage changes) | -0.8 | -0.3 | 0.9 | 1.5 | 1.9 | 2.0 |

Sources: Eurostat and June 2015 Eurosystem staff macroeconomic projections.
Notes: The data refer to the aggregate general government sector of the euro area, including Lithuania (also for the period before 2015). The data are in line with the data reported in the June 2015 Eurosystem staff macroeconomic projections for the euro area. Owing to rounding, figures may not add up.

forecast considers all euro area countries that are currently subject to an excessive deficit procedure (EDP), except for Spain, to be on track for a timely abrogation of the EDP, which is mainly due to the deficit-decreasing impact of the cycle. However, given that structural budgetary positions are hardly improving, there is a risk that mistakes made in the pre-crisis period, when improvements in headline balances proved not to be durable, could be repeated. As the cyclical recovery gathers pace, it will be important to increase the emphasis on debt sustainability and to resume consolidation to achieve progress towards medium-term budgetary objectives in all those countries with remaining consolidation needs (see Box 8).

# BOXES

## Box 1

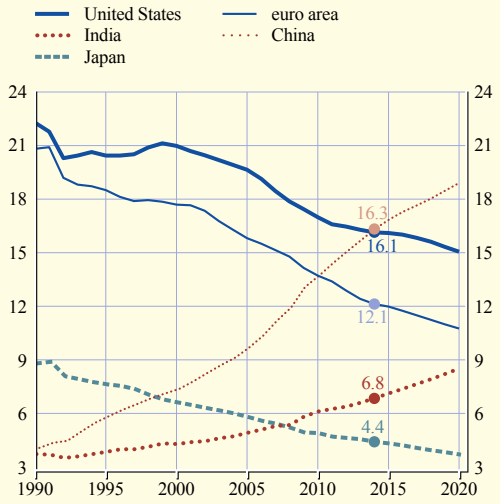
### THE RISE TO PROMINENCE OF INDIA'S ECONOMY

**India has gradually gained in global economic prominence over the past decade.** In purchasing power parity (PPP) terms, in 2014 India was already the third-largest country in the world after China and the United States. With growth expected by many observers to remain strong in the future, India's contribution to global growth, and thus its relevance for the euro area outlook, may increase further. This box attempts to put India's recent policy developments into perspective and to assess the economic prospects and challenges for the country.

**India already plays an important role in the global economy.** In 2014 it accounted for 6.8% of world GDP on a PPP basis (see Chart A) and provided the largest contribution to global growth after China (see Chart B). In contrast, in global trade and financial markets, India has played a relatively smaller role thus far. It accounted for less than 2% of euro area exports and just 2.5% of world imports in 2013, which is more in line with India's share of world GDP based on market exchange rates. At the end of 2013, India was the recipient of less than 1% of the global stock of foreign direct investment (FDI); in terms of outward FDI, the country's share of the global FDI stock was even smaller (see Chart C). India's impact on commodity markets on the demand side has also been comparatively small, considering its large population. For example, its share of world energy consumption was less than 5% until recently – much smaller than China's share (more than 20%).

**Chart A Shares of world GDP**

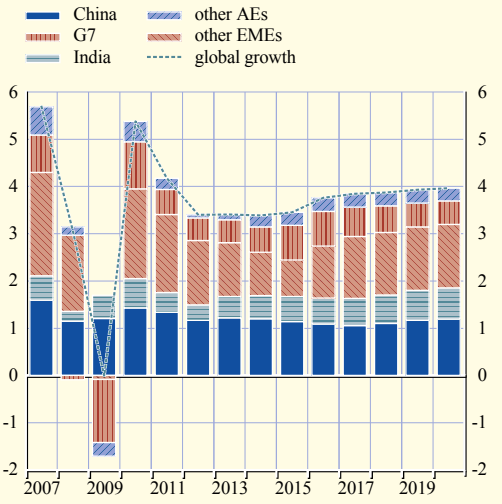
(percentages of world GDP)




Sources: IMF World Economic Outlook, April 2015, and ECB calculations.
Notes: GDP shares are based on the purchasing power parity valuation of each country's GDP. Figures for 2014 are marked on the chart; data for ensuing years refer to IMF projections.

**Chart B Contributions to global growth**

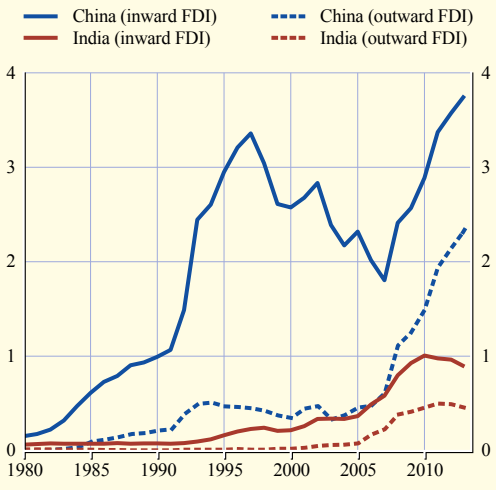
(percentage changes; percentage point contributions)




Sources: IMF World Economic Outlook, April 2015, and ECB calculations.
Notes: "Other AEs" refers to all advanced economies outside the G7. "Other EMEs" refers to all emerging market economies besides India and China. Data for 2015 and ensuing years refer to IMF projections.

**Chart C Shares of global FDI stock**

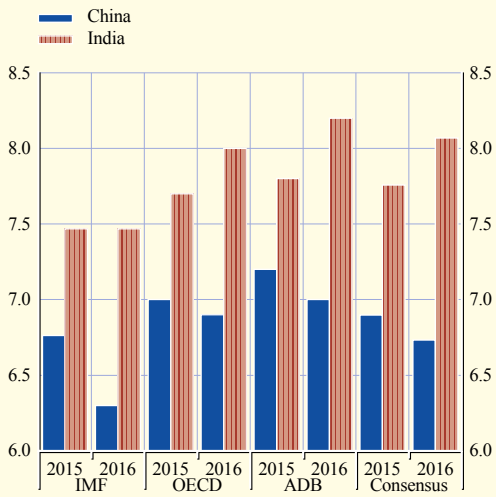
(percentages)




Source: UNCTAD.

**Chart D Growth projections for India and China**

(annual percentage changes)




Sources: IMF World Economic Outlook, April 2015; OECD Interim Economic Assessment, March 2015; Asian Development Bank's Asian Development Outlook, March 2015; Consensus Economics, May 2015.
Note: IMF, Asian Development Bank and Consensus Economics forecasts for India are on a fiscal year basis (e.g. 2015 refers to the fiscal year commencing in April 2015).

**India is widely expected to outpace China to become the world's fastest growing large economy this year.** India's near-term outlook has improved, benefitting in particular from recent policy reforms and the lower oil prices, which have helped the country to address some long-standing macroeconomic vulnerabilities, including high inflation and large current account and fiscal deficits. Consumer price inflation has fallen significantly in recent quarters and is expected to remain below 6% until the end of the current fiscal year (April 2015 to March 2016). In an environment of easing inflation, the Reserve Bank of India lowered its policy rate twice earlier this year, reducing it to 7.5%, and is expected to maintain an accommodative stance to support growth. In the future, the newly adopted inflation targeting regime could help to enhance the credibility of India's monetary policy. Fiscal deficits have declined over the past several years, with the central government's fiscal deficit falling to 4.1% of GDP in the last fiscal year, as the government took the opportunity of the lower global oil prices to remove some fuel subsidies. India's current account deficit has also declined, falling from 4.8% of GDP in 2012 to about 1.4% in the last fiscal year. Recent policy reforms, including plans for accelerated public infrastructure investment, appear to have buoyed business and consumer confidence about the economic outlook. Against this backdrop, with recent data suggesting a faster underlying pace of growth,[1] most forecasters expect India's growth to accelerate over the next few years to around 8%, outpacing that of China (see Chart D).

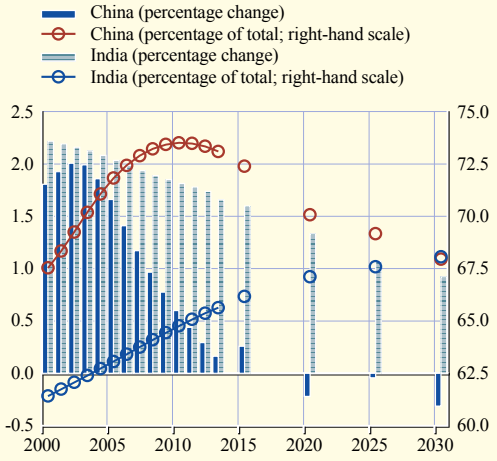
**Looking further ahead, India's growth potential remains high as the country will continue to enjoy a large demographic dividend.** Demographic trends suggest that by 2030 India will overtake

1 The revised GDP series released by India's Central Statistical Office on 30 January and 9 February this year shows a significantly stronger pace of growth in recent years. Having sharply moderated from 11% in 2010 to 5.3% in 2012, India's economic activity is estimated to have rebounded by 6.4% in 2013 and 7.2% in 2014 – upward revisions of 1.7 percentage points and 1.1 percentage points respectively.

China as the world's most populous country with the largest labour force. By that time, with more than one billion people of working age, India's working age population would be larger than those of the euro area, the United States and Indonesia combined (the economies with the third, fourth and fifth-largest populations respectively). In addition, in contrast to China, India's working age population (as a share of total population) is expected to keep rising (see Chart E). As a consequence, the labour contribution to India's potential growth would be expected to gradually increase over the next decade. For example, the IMF and Consensus Economics project India's GDP growth to average 7.6% between 2015 and 2020.

Chart E Working age population

(percentage changes; percentages of total population)




Sources: United Nations and World Bank.
Note: Data for 2015 and ensuing years refer to projections.

**The outlook for India, however, depends on the country's ability to address a number of major challenges.** Recent policy initiatives by the government appear to have boosted market confidence, and they provide a stronger basis for stable macroeconomic management, including sound fiscal policies and a focus on price stability for the central bank. The Indian government has also taken a number of steps to improve the business climate. Additional structural reforms to address the legacy impediments to growth, including measures to reduce bureaucracy and speed up infrastructure investment, could help to sustain the strong pace of growth in the coming years.

**Assuming India fulfils its potential, its standing in the global economy is likely to increase.** Given India's rapid growth and rising share of world GDP, its contribution to global growth is likely to increase. According to the latest IMF projections, India's contribution to global growth is expected to be even larger than the combined contribution of the G7 by 2018, albeit remaining second to China's contribution (see Chart B).

Box 2

## RECENT EQUITY PRICE DEVELOPMENTS IN THE EURO AREA AND THE UNITED STATES

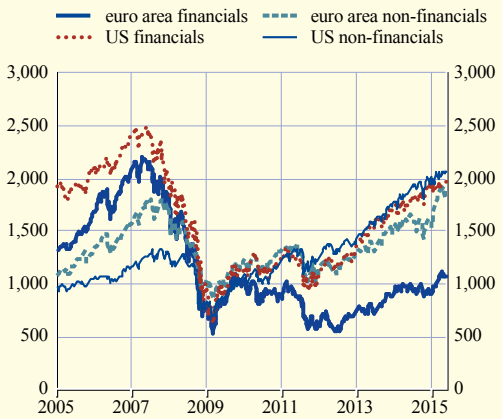
**Despite recent increases, euro area equity prices remain slightly below the peaks reached prior to the financial crisis.** Euro area equity prices have been regaining lost ground since mid-2012, albeit against the backdrop of a subdued outlook for growth. This upward trend was temporarily halted during the second half of 2014, when concerns about a double-dip recession suppressed euro area stock prices (see Chart A). In contrast with developments in the euro area, the overall equity price index in the United States is well above its pre-crisis peak level (see Chart B).

**Both in the euro area and in the United States, financial stocks have clearly been underperforming vis-à-vis non-financial stocks.** A more detailed sectoral breakdown reveals that the price increases for non-financial stocks have been both stronger and more broadly based across economic sub-sectors in the United States than in the euro area (see Chart B). This can primarily be explained by the fact that the realised return on equity, a measure of profitability, has been higher in the United States than in the euro area for the past five years. Furthermore, over the same period earnings announcements in the United States have largely surprised on the positive side, whereas they have generally fallen short of market expectations in the euro area.

**Following the announcement of the ECB's expanded asset purchase programme (APP) in January 2015, euro area equity prices have increased strongly.** They have risen by more than 17% since the start of the year and have been broadly based across financial and non-financial stock,

Chart A US and euro area equity prices

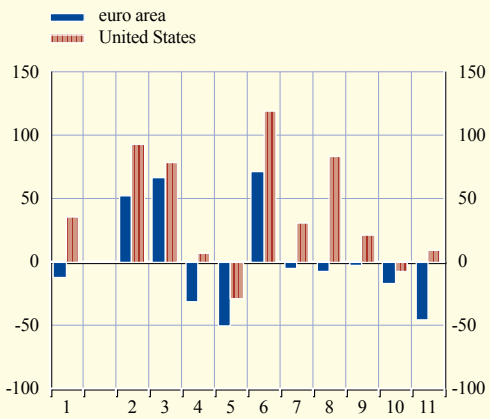
(points)




Sources: Thomson Reuters and ECB calculations.
Notes: Data refer to Morgan Stanley Capital International sectoral equity prices. The latest observation is for 29 May 2015.

Chart B Equity prices vis-à-vis July 2007 pre-crisis peak

(in percent)

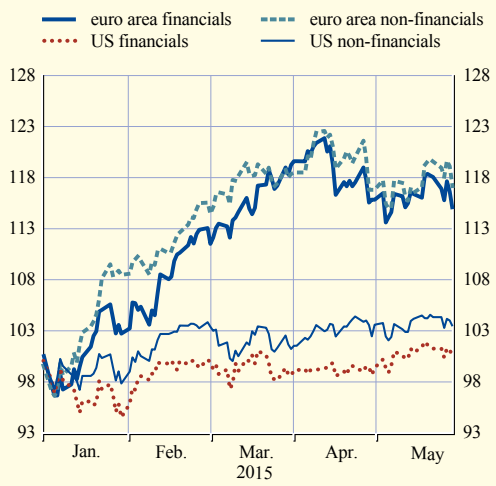



1 Total
2 Consumer discretionary
3 Consumer staples
4 Energy
5 Financials
6 Health care
7 Industrials
8 IT
9 Materials
10 Telecom.
11 Utilities

Sources: Thomson Reuters and ECB calculations.
Notes: Data refer to Morgan Stanley Capital International sectoral equity prices. US equity prices reached their peak in October 2007, but that peak was only slightly higher than the level in July. For the sake of simplicity, the euro area peak of July 2007 has been taken as the common peak date. The latest observation is for 29 May 2015.

**Chart C Price developments following the expanded APP announcement**

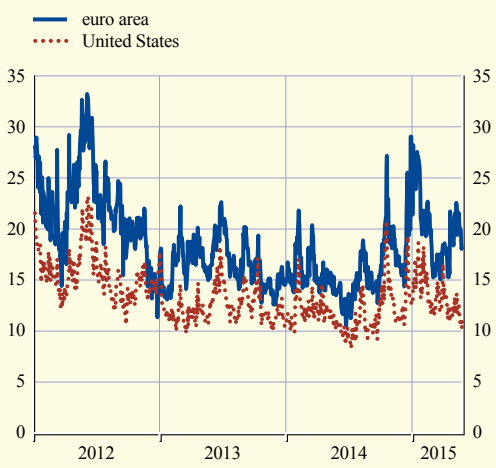
(re-based: Jan. 2015=100)




Sources: Thomson Reuters and ECB calculations.
Note: The latest observation is for 29 May 2015.

**Chart D Stock market volatility**

(in percent)




Source: Thomson Reuters.
Note: The latest observation is for 29 May 2015.

as well as jurisdictions. This contrasts with developments in the United States, where equity indices have remained largely flat since the start of the year (see Chart C).

**Volatility in euro area equity markets also declined following the announcement of the expanded APP.** Before the announcement of the expanded APP, euro area stock market uncertainty, as measured by implied volatility, had been strongly driven by increased risk aversion associated with the political uncertainties in Greece. Stock market uncertainty in the euro area spiked around the middle of October as political tensions in Greece unfolded, and once more in mid-December when it became apparent that discussions in the Greek parliament were not leading to a resolution of the political impasse (see Chart D). Following the announcement of the expanded APP, volatility declined.

**Since mid-April volatility in euro area equity markets has increased amid increased volatility in euro area sovereign bond markets.** The heightened volatility in euro area bond markets in mid-April predominantly reflected a strong increase in yields at the longer end of the yield curve for euro area government bonds. This increase mainly reflected a technical correction from the strong decline recorded following the initial phase of implementation of the expanded APP. The sell-off in bonds may also have been exacerbated by investors' herding behaviour in an environment of deteriorating liquidity conditions.

**A dividend discount model can be used to further identify the recent drivers of equity prices.** In this model, the stock price is the discounted value of all future dividends ($D_t$) and the discount factor is equal to the risk-free rate ($r$), plus some compensation for the risks taken by investors, i.e. the equity risk premium ($ERP$), such that:

$$P = E\left\{\sum_{t=1}^{\infty} \frac{D_t}{(1+r+ERP)^t}\right\}$$

In order to render this model operational, it is necessary to form assumptions on the future path of dividends. Following the model proposed by Fuller and Hsia[1], it can be assumed that dividend growth will develop in three stages. In the first stage, which is assumed to last for four years, dividends are expected to grow at a rate of $g_S$. The second stage is an interim period (assumed to last for eight years) where dividend growth is expected to adjust in a linear fashion to a constant long-term steady-state growth rate, $g_L$, which is assumed to prevail throughout the third infinite stage. Under these assumptions, Fuller and Hsia show that equity prices can be approximately computed by

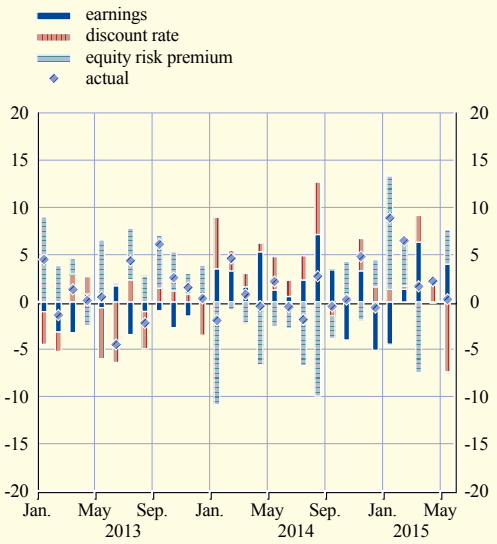
$$P = D\frac{(1+g_L)+8(g_S-g_L)}{r+ERP-g_L}$$

It is assumed that $g_S$ is equivalent to analysts' earnings-per-share growth forecasts, while $g_L$ is approximated by the future long-term GDP growth rate reported by Consensus Economics.[2]

**The increase in euro area equity prices recorded during the first few months of 2015 has been primarily driven by increased risk appetite and lower discount rates.** The analysis of the dividend discount model shown in Charts E and F reveals that, for most of 2014, the positive impact on equity prices from improvements in earnings expectations and reductions in the discount factor was countered by heightened risk aversion (measured as an increase in the equity

**Chart E Decomposition of changes in euro area non-financial corporation stock prices using the dividend discount model**

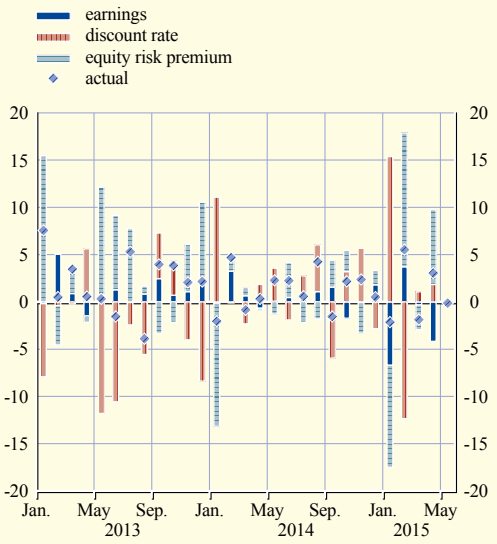
(percentages and percentage points contributions; month-on-month changes)




Sources: Thomson Reuters and ECB calculations.

**Chart F Decomposition of changes in US non-financial corporation stock prices using the dividend discount model**

(percentages and percentage points contributions; month-on-month changes)




Sources: Thomson Reuters and ECB calculations.

1 See Fuller, R. J. and Hsia, C, "A Simplified Common Stock Valuation Model", *Financial Analysts Journal*, Vol. 40, September-October 1984, pp. 49-56.

2 In this box, $g_S$ is set equal to I/B/E/S (Institutional Brokers Estimate System) analysts' three-to-five-year ahead ("long-term") earnings-per-share growth forecasts. The risk-free rate, r, is assumed to be the ten-year overnight index swap rate. Given the current level of the equity price P and the level of dividends D, the equity risk premium ERP can be computed from the formula.

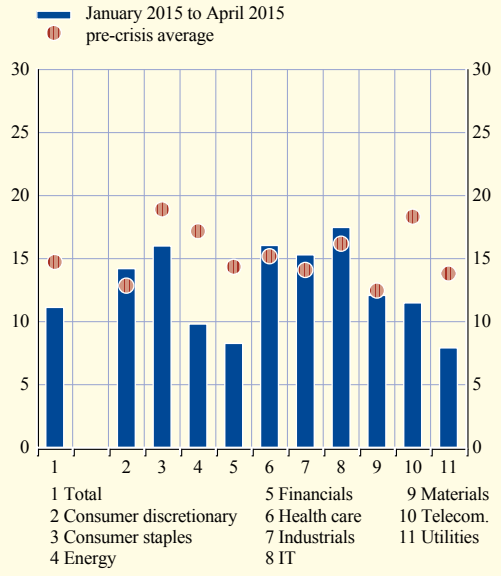
risk premium) that thus kept stock prices broadly unchanged. This scenario was reversed in January and February 2015, following the announcement of the expanded APP, which triggered a reduction in risk aversion, thereby strongly boosting equity prices. In addition, model estimates suggest that at least part of the surge in equity prices at the beginning of the year was related to a depreciation of the euro and weak oil prices.

This was in contrast to the situation in the United States, where weak economic data in January 2015 was also reflected in a reduction in earnings expectations and only a slight increase in stock prices (see Chart F). The impact on stock prices was kept relatively contained only because the weak data releases led to a reduction in the discount rate, owing to the likely postponement of a tightening in monetary policy. The recent bout of volatility in euro area bond markets, which has resulted in an increase in the discount rate, is reflected in the subdued performance of euro area stock prices in May 2015.

**Looking ahead, long-term growth prospects in the euro area remain relatively muted and continue to constrain the performance of equity prices in the euro area vis-a-vis those in the United States.** Although recent macroeconomic data releases have been better than expected, the prospects for a revival in euro area potential output growth remain weak. This has been weighing on analysts' expectations for long-term earnings growth, with long-term expectations for the return on equity remaining much lower in the euro area than in the United States (see Charts G and H). They also remain below pre-crisis average levels.

**Chart G Euro area expected return on equity more than two years ahead**

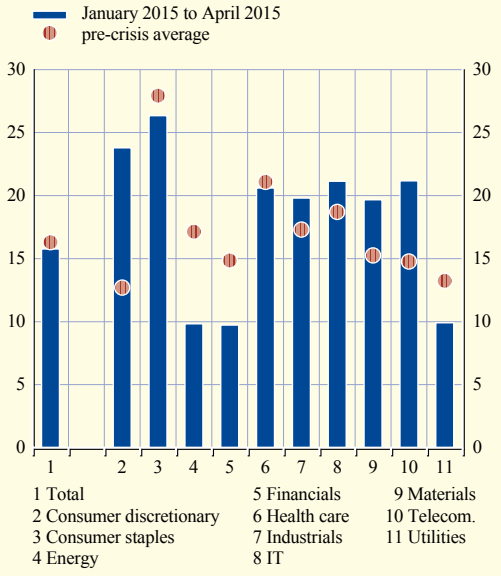
(in percent)




Sources: Thomson Reuters and ECB calculations.
Notes: The return on equity is computed from the ratio of the price earnings and price to book value series from the Morgan Stanley Capital International indexes. The pre-crisis average refers to the period from January 1999 to June 2007.

**Chart H United States expected return on equity more than two years ahead**

(in percent)




Sources: Thomson Reuters and ECB calculations.
Note: The return on equity is computed from the ratio of the price earnings and price to book value series from the Morgan Stanley Capital International indexes. The pre-crisis average refers to the period from January 1999 to June 2007.

**Overall, in spite of the steady increase in euro area stock prices since mid-2012, and the more recent sharp increase following the expanded APP announcement, euro area stock prices remain at levels below their pre-crisis peak.** Price earnings ratios remain close to or below their long-run averages across most sectors. Vis-a-vis the United States, euro area equity prices continue to underperform as concerns about the potential growth outlook for the euro area continue to dampen earnings expectations.

Box 3

## LIQUIDITY CONDITIONS AND MONETARY POLICY OPERATIONS IN THE PERIOD FROM 28 JANUARY 2015 TO 21 APRIL 2015

**This box describes the ECB's monetary policy operations during the first and second reserve maintenance periods of 2015, which ran from 28 January to 10 March 2015 and from 11 March to 21 April 2015 respectively.**[1] During the period under review, the interest rates on the main refinancing operations (MROs), the marginal lending facility (MLF) and the deposit facility (DF) remained unchanged at 0.05%, 0.30% and -0.20% respectively.[2] On 25 March 2015, the third targeted longer-term refinancing operation (TLTRO) was settled, with €97.8 billion allocated, compared with €82.6 billion for the first operation and €129.8 billion for the second.[3] In addition, on 9 March 2015 the Eurosystem started to buy public sector securities as part of its expanded asset purchase programme (APP). The expanded APP consists of the public sector purchase programme (PSPP), the third covered bond purchase programme (CBPP3) and the asset-backed securities purchase programme (ABSPP).[4]

### Liquidity needs

**In the period under review, the aggregate daily liquidity needs of the banking system, defined as the sum of autonomous factors and reserve requirements, decreased by €23.5 billion compared with the previous review period, from 12 November 2014 to 27 January 2015, to stand at an average of €582.2 billion.** This decline reflects lower autonomous factors, which stood at an average level of €473.1 billion.

**The decrease in autonomous factors resulted mainly from the increase in liquidity-providing factors.** Among these, net foreign assets increased, on average, by €35.6 billion to €607.6 billion, mostly reflecting the quarterly revaluations of portfolios, which were sizable owing to the depreciation of the euro. The changes in net foreign assets were partially offset by the changes in other autonomous factors.

**As far as liquidity-absorbing factors are concerned, the decline in government deposits slowed, reaching an average of €66.1 billion, compared with €68.3 billion in the previous review period.** Since the cut in the deposit facility rate to -0.20% in September 2014, government deposits have been on a continuous downward trend, as the introduction of the negative deposit facility rate and the adoption of the new Guideline on the remuneration of government deposits[5] provided incentives to treasuries to reduce their cash holdings. This trend, however, reversed in the second maintenance period of 2015 when government deposits increased, as the continuing

1 As of January 2015 the length of the maintenance periods is extended to six weeks to match the changes in the schedule of the Governing Council meetings. For more information, see: http://www.ecb.europa.eu/press/pr/date/2014/html/pr140703_1.en.html

2 MROs continued to be conducted as fixed-rate tender procedures with full allotment. The same procedure remained in use for the three-month longer-term refinancing operations (LTROs). The interest rate in each LTRO operation was fixed at the average of the rates on the MROs over the LTRO's lifetime.

3 For information on the first two TLTROs, see the box "Liquidity conditions and monetary policy operations in the period from 13 August to 11 November", *Monthly Bulletin*, ECB, December 2014, p.33 (available at: https://www.ecb.europa.eu/pub/pdf/mobu/mb201412en.pdf) and the box "Liquidity conditions and monetary policy operations in the period from 12 November 2014 to 27 January 2015, *Economic Bulletin*, ECB, Issue 2, 2015, p.38 (available at: http://www.ecb.europa.eu/pub/pdf/ecbu/eb201502.en.pdf).

4 Detailed information on the expanded APP is available on the ECB's website (http://www.ecb.europa.eu/mopo/implement/omt/html/index.en.html).

5 Available at: https://www.ecb.europa.eu/ecb/legal/pdf/oj_jol_2014_168_r_0015_en_txt.pdf

decline in market rates reduced the available alternatives for treasuries to place their cash. Banknotes in circulation increased on average by €14.5 billion following the usual higher demand for banknotes over the Easter period, but also as a result of some country-specific factors.

**The volatility of autonomous factors increased further during the period under review.** The higher volatility primarily resulted from the shift in net foreign assets in view of the quarterly revaluations of foreign currency assets, but also from changes in net assets denominated in euro as a result of more volatile foreign deposits at the Eurosystem. At the same time, the volatility in the demand for banknotes declined compared with the previous period under review, when the Christmas demand for banknotes triggered temporary volatility.

**The average absolute error in weekly forecasts of autonomous factors decreased in the period under review from €8.7 billion to €5.4 billion, mostly as a result of the decline in forecasting errors on government deposits.** However, it remained difficult to anticipate the investment activities of treasuries while short-term money market rates were turning increasingly negative along with the increase in excess liquidity.

### Liquidity provision

**The average amount of liquidity provided through open market operations – tender operations and outright purchases – increased by €13.3 billion in the period under review, to reach €771.9 billion.** This increase was owing to the average increase in the outright portfolios (of € 48.6 billion) outweighing the average decline in the take-up in tender operations (amounting to € 35.3 billion).

**Liquidity provided through the tender operations decreased to an average of €511.2 billion, compared with €546.5 billion in the previous review period.** This decline was mainly as a result of the early repayment and eventual maturity of the two three-year LTROs during the first maintenance period, which resulted in a €182.0 billion liquidity drain. Nevertheless, a fraction of this amount was offset by the regular liquidity-providing operations, the MRO and the three-month LTROs. More notably, the March TLTRO injected €97.8 billion into the banking system.

**In addition, the liquidity provided through outright portfolios increased on average by €48.6 billion on the back of the implementation of the expanded APP.** The increase in the average liquidity provision from the underlying PSPP, CBPP3 and ABSPP (€22.0 billion, €30.4 billion and €2.7 billion respectively) more than offset the decline owing to the maturity of some bonds in the Securities Markets Programme portfolio and in the previous two covered bond purchase programmes.

### Excess liquidity

**Excess liquidity rose by €28.7 billion to an average of €181.6 billion over the period under review, with significant differences between the two maintenance periods.** In the first maintenance period, excess liquidity decreased to a level of, on average, €159.8 billion, mainly owing to the maturity of the two three-year LTROs. In this maintenance period, excess liquidity fluctuated in the range of €139.2 billion to €198.4 billion. By contrast, in the second maintenance period, excess liquidity increased considerably to an average of €209.4 billion, mainly reflecting

the settlement of the third TLTRO and the bond purchases within the expanded APP. During the second maintenance period, excess liquidity moved from the minimum of €150.6 billion to as high as €273.2 billion.

## EUROSYSTEM – liquidity situation

| | 28. Jan. to 21. Apr. | | 12. Nov. to 27. Jan. | Second maintenance period | | First maintenance period | |
|---|---|---|---|---|---|---|---|
| **Liabilities – liquidity needs (averages, EUR billions)** | | | | | | | |
| Autonomous liquidity factors | 1,601.6 | (+4.5) | 1,597.1 | 1,627.1 | (+51.1) | 1,576.0 | (-27.6) |
| Banknotes in circulation | 1,010.7 | (+14.5) | 996.2 | 1,015.9 | (+10.6) | 1,005.4 | (-0.2) |
| Government deposits | 66.1 | (-2.1) | 68.3 | 70.2 | (+8.0) | 62.1 | (-4.2) |
| Other autonomous factors | 524.8 | (-7.9) | 532.6 | 541.0 | (+32.5) | 508.5 | (-23.2) |
| Monetary policy instruments | | | | | | | |
| Current accounts | 243.6 | (+25.8) | 217.8 | 261.8 | (+36.5) | 225.3 | (-10.9) |
| Minimum reserve requirements | 109.1 | (+0.9) | 106.3 | 110.6 | (+3.0) | 107.5 | (+1.3) |
| Deposit facility | 55.5 | (+13.6) | 41.9 | 68.6 | (+26.2) | 42.4 | (-7.9) |
| Liquidity-absorbing fine-tuning operations | 0.0 | (+0.0) | 0.0 | 0.0 | (+0.0) | 0.0 | (+0.0) |
| **Assets – liquidity supply (averages, EUR billions)** | | | | | | | |
| Autonomous liquidity factors | 1,128.7 | (+30.7) | 1,098.0 | 1,162.2 | (+66.9) | 1,095.3 | (-3.4) |
| Net foreign assets | 607.6 | (+35.6) | 572.0 | 625.9 | (+36.7) | 589.2 | (+12.8) |
| Net assets denominated in euro | 521.1 | (-4.8) | 526.0 | 536.3 | (+30.2) | 506.0 | (-16.1) |
| Monetary policy instruments | | | | | | | |
| Open market operations | 771.9 | (+13.3) | 758.6 | 795.6 | (+47.3) | 748.3 | (-43.0) |
| Tender operations provided | 511.2 | (-35.3) | 546.5 | 505.0 | (-12.6) | 517.5 | (-55.9) |
| MROs | 130.7 | (+17.4) | 113.3 | 118.9 | (-23.7) | 142.6 | (+23.6) |
| Special-term refinancing operations | 0.0 | (+0.0) | 0.0 | 0.0 | (+0.0) | 0.0 | (+0.0) |
| Three-month LTROs | 96.9 | (+53.5) | 43.4 | 108.4 | (+23.1) | 85.3 | (+36.3) |
| Three-year LTROs | 38.6 | (-197.8) | 236.4 | 0.0 | (-77.2) | 77.2 | (-134.3) |
| Targeted LTROs | 245.1 | (+91.6) | 153.4 | 277.7 | (+65.2) | 212.4 | (+18.5) |
| Outright portfolios | 260.7 | (+48.6) | 212.1 | 290.6 | (+59.8) | 230.8 | (+12.9) |
| First covered bond purchase programme | 26.5 | (-2.6) | 29.0 | 26.0 | (-1.0) | 27.0 | (-1.8) |
| Second covered bond purchase programme | 11.9 | (-0.9) | 12.8 | 11.5 | (-0.8) | 12.3 | (-0.5) |
| Third covered bond purchase programme | 55.4 | (+30.4) | 25.0 | 63.6 | (+16.3) | 47.2 | (+16.7) |
| Securities Markets Programme | 141.1 | (-3.0) | 144.1 | 140.8 | (-0.5) | 141.3 | (-2.8) |
| Asset-backed securities purchase programme | 3.8 | (+2.7) | 1.2 | 4.7 | (+1.7) | 3.0 | (+1.3) |
| Public sector purchase programme | 22.0 | (+22.0) | 0.0 | 44.0 | (+44.0) | 0.0 | (+0.0) |
| Marginal lending facility | 0.3 | (-0.1) | 0.4 | 0.2 | (-0.2) | 0.4 | (-0.1) |
| **Other liquidity-based information (averages, EUR billions)** | | | | | | | |
| Aggregate liquidity needs | 582.2 | (-23.5) | 605.7 | 575.8 | (-12.8) | 588.6 | (-23.0) |
| Autonomous factors | 473.1 | (-26.3) | 499.4 | 465.2 | (-15.7) | 481.0 | (-24.3) |
| Excess liquidity | 181.6 | (+28.7) | 153.0 | 209.4 | (+49.7) | 159.8 | (-20.0) |
| **Interest rate developments (percentages)** | | | | | | | |
| MROs | 0.05 | (+0.00) | 0.05 | 0.05 | (+0.00) | 0.05 | (+0.00) |
| Marginal lending facility | 0.30 | (+0.00) | 0.30 | 0.30 | (+0.00) | 0.30 | (+0.00) |
| Deposit facility | -0.20 | (+0.00) | -0.20 | -0.20 | (+0.00) | -0.20 | (+0.00) |
| EONIA average | -0.045 | (-0.014) | -0.031 | -0.061 | (-0.033) | -0.029 | (+0.019) |

Source: ECB
Note: Since all figures in the table are rounded, in some cases the figure indicated as the change relative to the previous period does not represent the difference between the rounded figures provided for these periods (differing by €0.1 billion).

**Given the higher level of excess liquidity, daily current account holdings increased considerably, by €25.8 billion, on average, to €243.6 billion, compared with the previous period.** The use of the deposit facility also increased further, from an average of €41.9 billion to €55.5 billion. In the period under review, relative recourse to the deposit facility increased marginally to 29% of the excess reserves,[6] compared with an average of 27% during the previous review period.

## Interest rate developments

**The EONIA rate averaged -2.9 basis points and -6.1 basis points in the first and second maintenance periods respectively.** The decrease in the EONIA rate reflected the continuing pass-through of the September 2014 interest rate cut in short-term rates, the gradual increase in excess liquidity and growing acceptance of the negative deposit facility rate being passed onto the deposit base.

6 Average current account holdings in excess of minimum reserve requirements.

Box 4

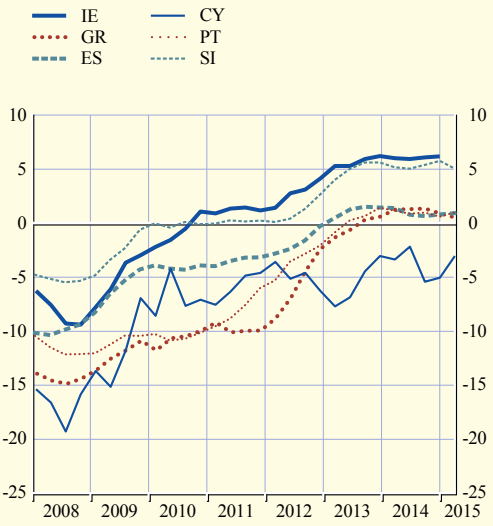
## RECENT CURRENT ACCOUNT DEVELOPMENTS IN EURO AREA COUNTRIES WITH LARGE PRE-CRISIS DEFICITS

**A number of euro area countries have been undergoing a process of external rebalancing.** In the years leading up to the global financial crisis, particularly large current account deficits were recorded in Ireland, Greece, Spain, Cyprus, Portugal and Slovenia.[1] Between 2008 and 2013 the current account balances of these economies saw a significant correction and, in most cases, turned into surplus. This box takes a closer look at the more recent current account developments in this group of countries.[2]

**In 2014 the current account correction in the euro area economies with large pre-crisis deficits came to a halt and even reversed slightly in some countries (see Chart A).** In Ireland, Greece and Slovenia, the current account was broadly unchanged in 2014 compared with the previous year. In Spain and Portugal, it deteriorated slightly, by 0.6 and 0.8 percentage point of GDP respectively. A more pronounced deterioration of 2.0 percentage points was registered in Cyprus, although this was partly unwound in the first quarter of 2015. With the exception of Cyprus, all of the countries under consideration continued to record current account surpluses. Hence, the majority of the current account improvements recorded by the countries with large pre-crisis deficits between 2008 and 2013 remain in place.

Chart A Current account balance

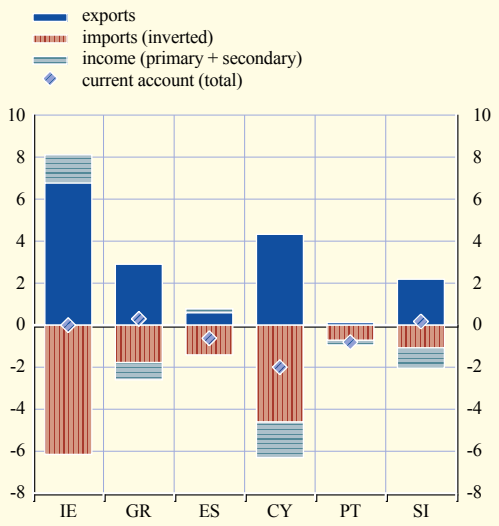
(as a percentage of GDP, four-quarter average)




Sources: ECB and Eurostat.
Note: The last observation is Q1 2015 except for Ireland (Q4 2014).

Chart B Decomposition of the change in the current account balance relative to GDP between 2013 and 2014

(percentage points)




Sources: ECB and Eurostat.
Note: A negative contribution from imports indicates an increase in imports relative to GDP.

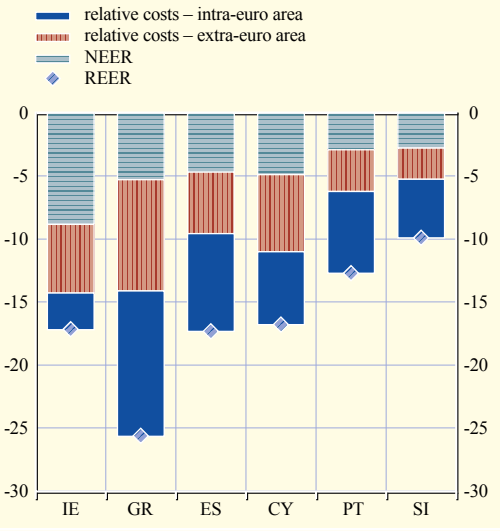
1 This box focuses on countries that in 2008 recorded current account deficits in excess of 4% of GDP and adopted the euro before 2008. Cyprus is added to this group, as it received EU-IMF financial assistance.
2 For the earlier post-crisis period, see the boxes entitled "Progress in the current account adjustment in the euro area in 2012", *Monthly Bulletin*, ECB, July 2013, and "To what extent has the current account adjustment in the stressed euro area countries been cyclical or structural?", *Monthly Bulletin*, ECB, January 2014.

**The recent current account developments mainly reflect a demand-driven recovery in imports, which counterbalanced the continued expansion in exports.** In 2014 exports increased in most countries, particularly Ireland, against the backdrop of strengthening foreign demand (see Chart B). However, imports also recovered from their persistent weakness, which can be partly explained by a gradual pick-up in domestic demand growth. In Cyprus, Greece, Slovenia and, to a lesser extent, Portugal, a deterioration in the combined primary and secondary income account also played a role.[3] In Cyprus, this was mainly driven by an emerging deficit in the direct investment income account, in Greece by a deterioration in the secondary income account and in Slovenia by a broad-based widening of the deficit on investment income.

**Looking at the 2009-14 period, the downward impact on the current account from the stabilisation of domestic demand was partly offset by sustained improvements in relative prices and costs, as well as the decline in oil prices.** Compared with 2009 (when the nominal effective exchange rate of the euro reached its peak), the real effective exchange rates of the countries with large pre-crisis current account deficits, deflated by unit labour costs, have depreciated by 10%-30% (see Chart C). In the case of Ireland, most of the real depreciation since 2009 is accounted for by decreases in the nominal effective exchange rate, while for the other countries the depreciation mainly reflected adjustments in unit labour costs relative to the other euro area countries and the rest of the world. With the exception of Slovenia, the countries with large pre-crisis current account deficits have by now largely unwound the losses in cost competitiveness, as measured by the ULC-deflated real effective exchange rate recorded vis-à-vis the euro area between 1999 and the onset of the crisis. However, the pass-through from unit labour costs into both producer and export prices remains incomplete, reflecting factors such as continuing barriers to competition in product markets and increases in indirect taxes.

**Chart C Breakdown of the change in the real effective exchange rate 2009-2014**

(as a percentage, percentage points)




Source: ECB.
Note: The chart shows the real effective exchange rate (REER), deflated by unit labour costs, vis-à-vis the other euro area countries and the EER-20 group of currencies. A decline in the REER corresponds to an improvement in cost competitiveness.

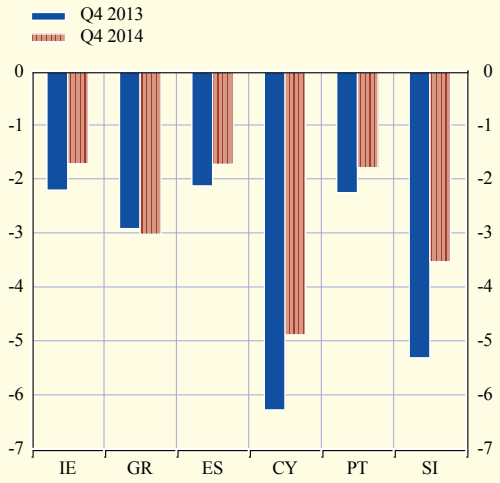
**In 2014 the decline in oil prices also supported the current account balances of euro area countries with large pre-crisis deficits.** Lower oil prices tend to reduce the oil bill and thus improve the structural deficit in trade in oil products. Between the last quarter of 2013 and the last quarter of 2014 the negative oil balances narrowed significantly in all countries except Greece (see Chart D), with price effects from lower oil prices being partly offset by stronger real imports of oil products owing to a pick-up in domestic demand.[4] The resulting improvements in the oil trade balance were particularly large in Cyprus and Slovenia (around 1.5-2.0 percentage points of GDP),

3 The primary income account mainly captures investment income and the compensation of employees. The secondary income account shows current transfers, such as receipts from the EU community budget.

4 Greece – and, to a lesser extent, Portugal – hosts oil-refining industries and therefore simultaneously imports and exports oil and related products, such as light petroleum distillates.

**Chart D Oil trade balance**

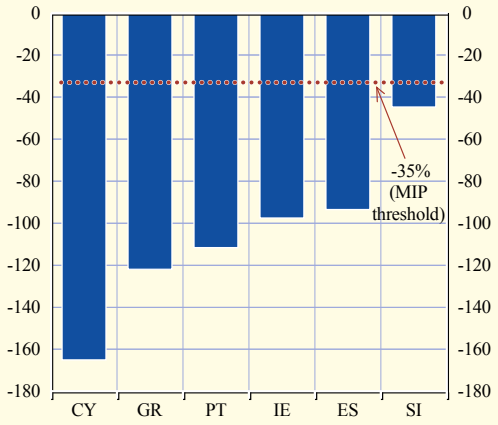
(as a percentage of GDP)




Source: Eurostat.
Note: Data refer to SITC category 33, i.e. petroleum, petroleum products and related materials.

**Chart E Net international investment position in 2014**

(as a percentage of GDP)




Source: Eurostat.
Note: The horizontal line corresponds to the indicative threshold of -35% of GDP used in the macroeconomic imbalance procedure (MIP).

but also noticeable in Ireland, Spain and Portugal (around 0.4-0.5 percentage point), where the positive effects of the decline in oil prices on the current account were partly offset by demand-driven increases in import volumes of oil and oil products.

**Large and persistent stock imbalances call for sustained external rebalancing.** Despite the flow adjustment seen over recent years, the countries with large pre-crisis current account deficits continue to record net foreign liabilities well in excess of 35% of GDP. This threshold is used in the context of the macroeconomic imbalance procedure to flag potential external stock imbalances that increase the vulnerability to future shocks. In most countries under consideration, net foreign liabilities are even above, or close to, 100% of GDP (see Chart E). Reducing these stock imbalances requires a combination of sustained current account improvements and robust nominal GDP growth over the medium term.

Box 5

## MONITORING THE EXCHANGE RATE PASS-THROUGH TO HICP INFLATION

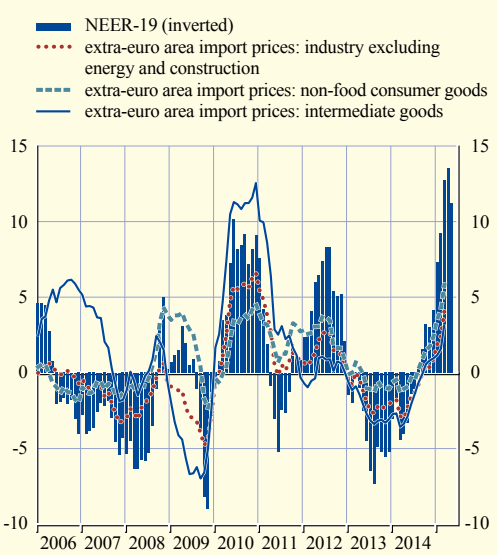
**The depreciation of the euro since mid-2014 plays an important role in shaping the current outlook for HICP inflation in the euro area.** In nominal effective terms, in May 2015 the exchange rate was about 10% lower than in December 2014 and roughly 15% lower than in March 2014 – the peak of the previous appreciation episode. This box reviews recent developments in import prices and producer prices as part of a typically lagged and incomplete pass-through of exchange rate movements to final consumer prices.

**The pass-through of exchange rate changes to HICP inflation can spread via a number of channels.** Considering the euro's recent depreciation episode, the first channel is the direct impact on the HICP via the retail chain as imported final consumer goods become more expensive. The second, an indirect channel, reflects higher costs due to more expensive imported inputs feeding through the different stages of domestic intermediate and final goods production. The third one, also an indirect channel, works via those price pressures which ultimately result from the stimulating impulse that a weaker currency has for economic activity and income.

**Import prices for both consumer and intermediate goods have increased strongly in recent months.** The annual rate of change in extra-euro area import prices for consumer goods excluding food stood at 5.8% in March 2015 (see Chart A). This increase was much larger than that in the prices for imported goods from inside the euro area and, as output price inflation in the global economy has tended to moderate in past months, such comparisons suggest that the

Chart A Import prices for intermediate and consumer goods

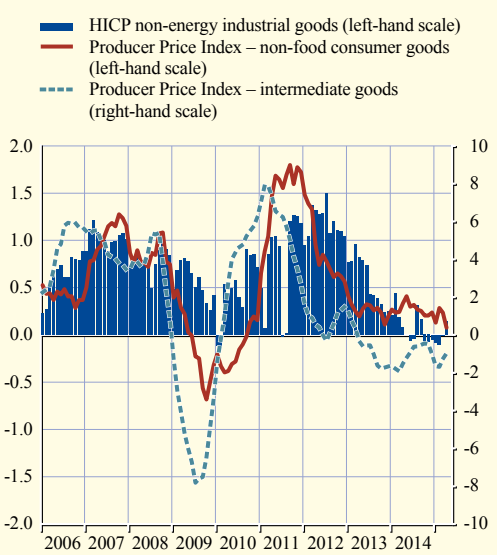
(annual percentage changes)




Sources: Eurostat and ECB calculations.
Note: The latest observations are for May 2015 for the nominal effective exchange rate and March 2015 for import prices.

Chart B Producer prices for intermediate and consumer goods

(annual percentage changes)




Sources: Eurostat and ECB calculations.
Note: The latest observations are for April 2015 (May 2015 for HICP non-energy industrial goods).

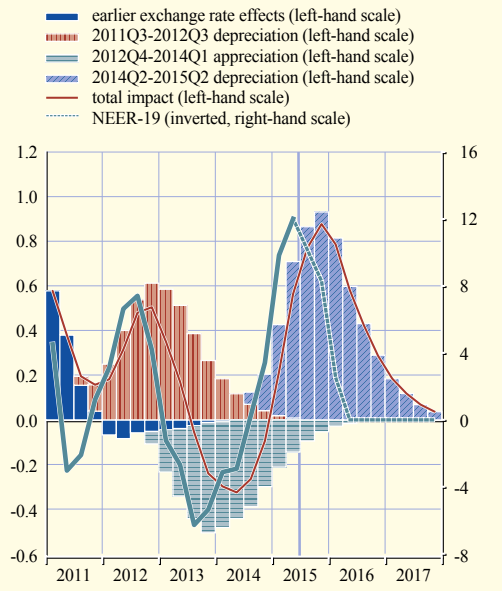
upswing in extra-euro area import prices predominantly reflected the strong upward impact of the euro's depreciation that started in spring 2014. The annual rate of change in import prices for intermediate goods has also risen markedly since spring 2014. This is again likely to signal a strong exchange rate impact given that prices of oil and raw materials, which have an important role in the manufacturing of intermediate goods, have tended to decline since then.

**By contrast, industrial producer prices for domestic sales have not yet shown signs of a visible upturn** (see Chart B). Producer prices depend not only on prices for imported inputs but also on domestic labour and non-labour cost developments, as well as firms' behaviour in adjusting their margins in response to cost developments. In this context, the importance of foreign inputs tends to decline along the production chain. Consequently, the sensitivity of producer prices to changes in prices for imported inputs tends to be relatively high for intermediate goods industries but more lagged and muted in the case of consumer goods industries.[1] Therefore, for the time being, the observed continued subdued developments in producer prices for domestic sales of consumer goods are consistent with the standard exchange rate pass-through having set in during the earlier stages of the production and pricing chain.

**The exchange rate pass-through to HICP inflation should become more noticeable in the coming quarters.** Model evidence suggests that there can be a shift of several quarters between the exchange rate changes and their impact on HICP inflation. This reflects the time it takes for import prices to feed through the different stages of the production and pricing chain and for price pressures to materialise in the domestic economy as a result of exchange rate-induced activity and income effects. Moreover, only around 15% of non-energy industrial goods in the HICP basket are estimated to be directly imported consumer products. Given the delays in pass-through, the movements in exchange rates can generate overlapping upward and downward impacts. For instance, the impacts of the euro's recent depreciation overlap with the lagged disinflationary effects of the euro's appreciation between the end of 2012 and spring 2014. Hence, in the absence of further exchange rate changes, the largest effect of the recent depreciation on inflation may only come to the fore by the end of 2015 (see Chart C).[2]

**Chart C Exchange rate pass-through to HICP inflation**

(percentage points; annual percentage changes)




Sources: ECB and ECB calculations.
Notes: Calculations are based on an updated version of the model presented in ECB Working Paper No 243. The latest observation for the nominal effective exchange rate is for the second quarter of 2015. The NEER is assumed to remain at this level until 2017.

1 See Hahn, E., "The impact of exchange rate shocks on sectoral activity and prices in the euro area", *Working Paper Series*, No 796, ECB, August 2007.

2 See Hahn, E., "Pass-through of external shocks to euro area inflation", *Working Paper Series*, No 243, ECB, July 2003. The impulse response functions used in Chart C are based on an updated version of the model provided in the aforementioned study. The responses are comparable with those of other models in terms of magnitude and timing. However, it should be borne in mind that a pass-through at each point in time may be different from average elasticities depending on the type of underlying cause of exchange rate movement.

**The pass-through of the euro's depreciation has become clearly visible in strong import price increases.** In line with a typically lagged pass-through of exchange rate changes, the impact on producer and consumer prices should become more noticeable in the coming quarters. A delay and dampening of this impact with regard to the ultimate pass-through to consumer prices is a normal feature of the production and pricing chain.

Box 6

## NON-BANK FINANCING FOR EURO AREA NFCS DURING THE CRISIS

**The financial crisis has raised concerns about the potential overreliance of euro area non-financial corporations on banks for external financing.** This is particularly true for SMEs (small and medium-sized enterprises) and mid-caps (larger-scale SMEs), which usually have little direct access to capital markets and depend on effective bank financing in addition to equity finance and other non-bank sources of funding. The strong dependency of SMEs and mid-caps on bank financing has left them more exposed to the post-crisis weaknesses and deleveraging needs of the EU banking sector. This box focuses on the financing of NFCs (non-financial corporations) in general, comparing SMEs and mid-caps with large enterprises in the crisis period from 2009 to 2014, based on the results of the European Central Bank and European Commission survey on the access to finance of enterprises (SAFE)[1]. In particular, the box illustrates that during the crisis period, "credit-constrained firms" – those firms which, in the SAFE, reported that they had limited access to bank loans – tended to switch to non-bank financing (trade credit, leasing) more often than firms without credit constraints. It appears, though, that firms in the countries most affected by the crisis faced more difficulties in making this switch in financing.

**On the basis of the SAFE it is possible to calculate the percentage of euro area NFCs of different sizes which have recourse to various financing instruments (see the table below).** Firms that are surveyed in the SAFE are asked whether or not they used a set of financing instruments in the preceding six-month period.[2] These instruments range from internal sources (retained earnings), grants/subsidised bank loans, bank financing (credit lines, overdrafts, credit cards and loans) to various sources of non-bank external finance such as trade credit, other loans (informal or from a related company), leasing, issued debt, mezzanine financing and equity.

Table Use of financing instruments by non-financial corporations

(percentage averages out of total sample over 2009-2014)

| | Micro | Small | Medium | Large |
|---|---|---|---|---|
| Retained earnings | 24 | 30 | 38 | 46 |
| Grants/subsidised loans | 12 | 16 | 20 | 22 |
| Bank overdrafts | 38 | 43 | 40 | 42 |
| Bank loans | 28 | 39 | 43 | 48 |
| Trade credit | 26 | 30 | 35 | 38 |
| Other loans | 9 | 12 | 19 | 28 |
| Leasing | 19 | 40 | 50 | 56 |
| Debt securities | 1 | 1 | 1 | 4 |
| Mezzanine | 1 | 2 | 4 | 6 |
| Equity | 4 | 6 | 8 | 9 |

Sources: ECB and European Commission Survey on the access to finance of enterprises.
Notes: Firm size is defined in terms of number of employees, with micro firms having one to nine employees, small firms ten to 49 employees, medium firms 50 to 249 employees and large firms 250 employees or more. "Other loans" are loans (excluding trade credit) from related companies or shareholders, family and friends. "Grants /subsidised loans" involve support from public sources in the form of guarantees, reduced interest rate loans, etc. "Bank overdrafts" include credit lines or credit card overdrafts. "Mezzanine" refers to subordinated loans, participation loans or similar financing instruments.

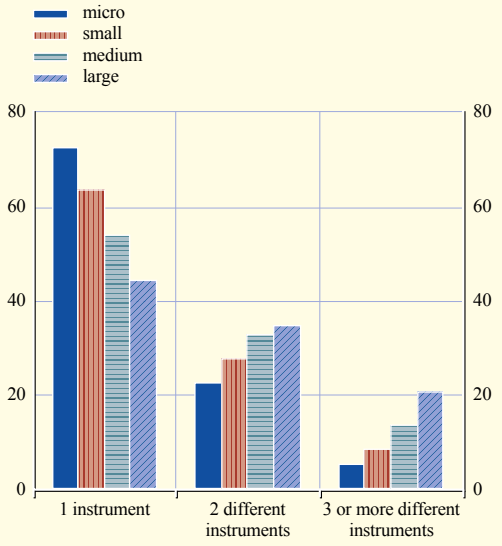
1 The SAFE is available here: http://www.ecb.europa.eu/stats/money/surveys/sme/html/index.en.html.
2 For previous analysis using information derived from the SAFE, see the presentation by O'Toole, C., "SME lifecycle and non-bank financing in Europe: what determines usage?" at the ECB workshop: SMEs' access to finance: the role of financial and non-financial intermediaries and capital markets, 11 December 2014.

**Bank-based instruments such as grants/subsidized loans, bank overdrafts and bank loans are used more than market-based instruments such as debt securities, mezzanine financing and equity.** Retained earnings are also used, especially by large firms (see the table). While leasing appears to be the most used instrument, at least for medium-sized and large firms, it is not necessarily the most important in terms of volume or in terms of financing new investment. For most of the instruments, there is a clear pattern; the percentage of use increases with the size of the firm. This confirms that large firms typically have better and more diversified access to the various sources of finance. It is also interesting to note that, out of all the external financing instruments used, micro and small firms favour short-term bank instruments like credit lines, bank overdrafts and credit cards, followed by bank loans, trade credit and leasing, while medium-sized and large firms have more frequent recourse to leasing, followed by bank loans (long-term and short-term) and trade credit.

**The share of NFCs making use of more than one non-bank external source of finance increases with the size of the firm.** Out of all firms using non-bank external sources of finance, 57% made use of just one financing source and the rest used at least two sources. Micro (72%), small (64%) and medium-sized (54%) firms mainly used one non-bank instrument of finance (see Chart A). However, over half of large firms (56%) made use of at least two sources of non-bank finance. The differentiation increases with size: for instance, 13% of medium-sized firms

**Chart A Share of NFCs making use of different non-bank external instruments**

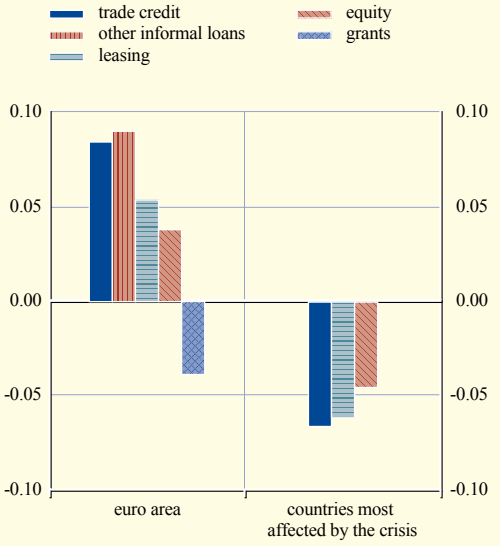
(percentages of replies out of total sample over 2009-2014)




Source: ECB and European Commission Survey on the access to finance of enterprises.
Notes: Firm size is defined in terms of employees, with micro firms having one to nine employees, small firms ten to 49 employees, medium firms 50 to 249 employees and large firms 250 employees or more. Non-bank financing instruments are: trade credit, other loans, leasing, debt securities, mezzanine financing and equity.

**Chart B Likelihood of credit-constrained NFCs using non-bank external instruments**

(estimates based on least squares regressions)[1)]




Notes: The dependent variable is a binary one that takes value 1 if the firm has used a specific source of finance in the preceding six months; it is zero otherwise. The estimation period is 2009-2014 for 11 euro area countries. Only statistically significant coefficients are reported.
1) The estimations are based on weighted least squares regressions (see the report on the results of the SAFE at http://www.ecb.europa.eu/stats/money/surveys/sme/html/index.en.html for an explanation of the weights used in the survey). The regressions include country-industry fixed effects and time fixed effects and errors are robust. The number of observations ranges from 39,949 for leasing to 18,242 for equity.

and 21% of large firms reported that they were using three or more external non-bank financing sources contemporaneously, while this percentage drops to 9% for small firms and 5% for micro firms.

**Econometric analysis provides more information on the use of non-bank external sources of finance during the crisis.** To investigate the determinants of the usage of non-bank financing, a dummy variable, which takes value 1 if the firm has used a specific external source of non-bank finance in the preceding six months or zero otherwise, is regressed on a set of factors. These are firm-specific factors related to the company's demographics and financial situation and factors related to bank financing, such as bank lending costs and credit standards, and an indicator of bank credit constraints.[3] These variables are particularly useful for detecting possible substitution relationships between bank and non-bank sources. Furthermore, country-level variables related to real activity (GDP growth and the unemployment rate) are taken into account and a distinction is made between countries that were less affected by the crisis (Belgium, Germany, France, Netherlands, Austria and Finland) and those that were more severely affected (Ireland, Greece, Spain, Italy and Portugal).

**Generally, financially constrained firms have been more likely to turn to non-bank financing such as trade credit and leasing.** Chart B reports the estimated coefficients of the econometric analysis. Focusing on those firms that reported to have been constrained in their access to bank loans, the results show that they were more likely to rely on non-bank financing (trade credit and leasing) than firms that did not report constraints (positive coefficients in the left-hand panel). The coefficient on the use of equity is also statistically significant and there is evidence that credit-constrained firms made less use of grants, indicating that firms that had already been denied bank loans found it difficult to benefit from public schemes aimed at obtaining guaranteed bank loans. Furthermore, credit-constrained firms in countries more severely affected by the crisis found it more difficult to switch from bank loans to other sources of finance than firms with the same kind of constraints in other countries (negative coefficients in the right-hand panel).

**Overall, the findings in this analysis confirm that non-financial corporations, and especially SMEs, use market-based sources of funding less than bank financing.** Although capital markets represent an important alternative source of financing for non-financial corporations, they are accessible mainly to larger firms with high credit ratings and which are generally located in larger countries with more developed financial markets. Unless non-financial corporations – and especially SMEs – have access to alternative sources of finance, any decline in bank lending is likely to have an adverse impact on their ability to finance investment. By harmonising financial market policies and supporting a shift towards market-based financing, the European Commission's initiative for a capital markets union will make SMEs in Europe more resilient to bank credit supply shocks and will help to reduce obstacles to their access to finance.

3 The dependent variable is a categorical one that takes value 1 if the firm has used a specific source of finance in the preceding six months; it is zero otherwise. The independent variables control for size, age, turnover classes, whether firms are independent or family owned and their financial situation in terms of sales and profitability, own capital and credit history. All variables are derived from the survey.

Box 7

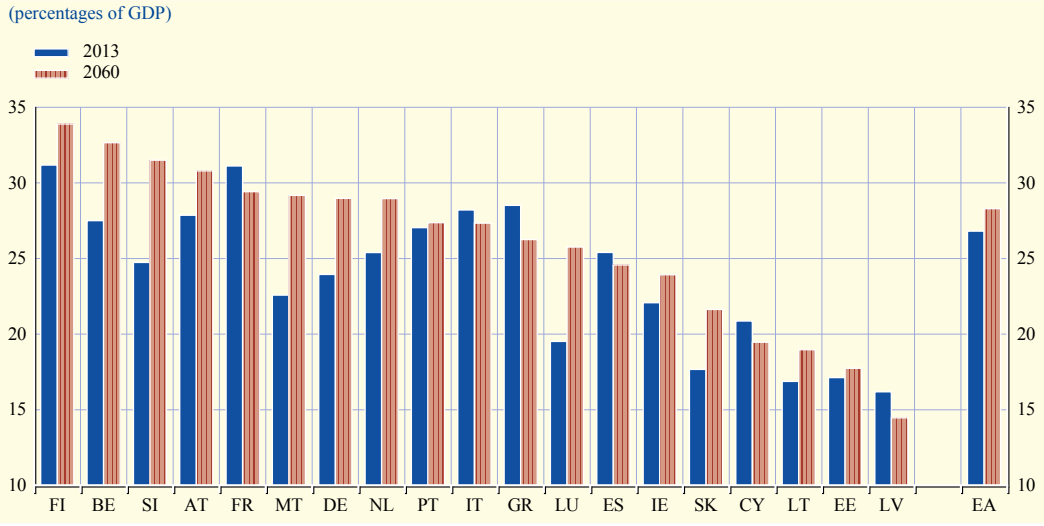
## THE 2015 AGEING REPORT: HOW COSTLY WILL AGEING IN EUROPE BE?

**Europe is facing a demographic challenge.** The old age dependency ratio, i.e. the share of people aged 65 or over relative to the working age population, is projected to almost double in the euro area from around 29% currently to above 50% by 2060. If adequate structural reforms are not implemented, ageing will have adverse implications for the sustainability of public finances, particularly in the long run. Moreover, given that the labour force is projected to shrink, ageing is expected to dampen potential GDP growth. Owing to its adverse impact on fiscal sustainability and potential growth, ageing is also of relevance to monetary policy.

**This box summarises and assesses the main projection results of the 2015 Ageing Report for euro area countries.** The 2015 Ageing Report, published on 12 May 2015, is the latest of the reports prepared every three years by the Ageing Working Group of the Economic Policy Committee. The report provides long-term projections for the period 2013-60 for all EU countries of total age-related costs and their components, i.e. pensions, health care, long-term care, education and unemployment benefits. The projections are based on a commonly agreed methodology and a set of demographic and macroeconomic assumptions.

**Total ageing costs in the euro area are expected to increase over the projection horizon, notwithstanding substantial cross-country differences.** According to the 2015 Ageing Report, total ageing costs in the euro area are projected to increase by 1.5 percentage points of GDP, i.e. from 26.8% of GDP in 2013 to 28.3% in 2060 (see Chart A). However, developments in ageing costs are very heterogeneous across countries. While ageing costs are projected to increase substantially in Slovenia, Malta, Luxembourg, Belgium and Germany (by at least 5 percentage points of GDP), they are expected to decline in France, Italy, Greece, Spain, Cyprus and Latvia. The level of ageing costs was highest in 2013 in Finland and France (both around 31% of GDP),

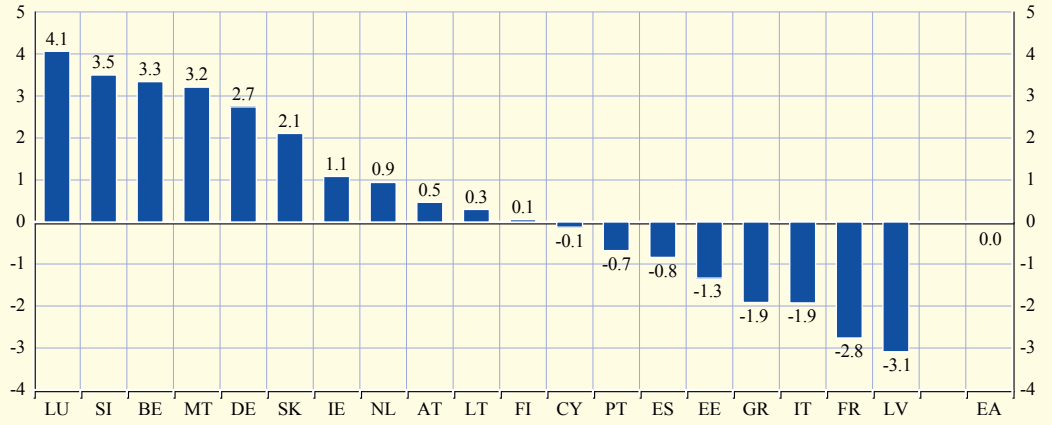
Chart A Total ageing costs




Source: 2015 Ageing Report.

**Chart B Change in pension costs**

(percentage points of GDP, 2013-60)




Source: 2015 Ageing Report.

as well as in Greece and Italy (both above 28% of GDP). By 2060 Finland, Belgium and Slovenia are expected to be the countries with the greatest ageing challenge in the euro area, with total ageing costs of well above 31% of GDP.

**Pension expenditure, which is the largest component of total ageing costs,[1] is projected to remain flat relative to GDP on average over the projection horizon.** In fact, pension expenditure in the euro area is projected to return to its 2013 level of 12.3% of GDP by 2060 (see Chart B). The dynamics in pension costs, however, differ substantially across countries. In the majority of euro area countries, pension expenditure is expected to increase (in particular in Luxembourg, Slovenia, Belgium and Malta, where it is projected to increase by more than 3 percentage points of GDP), while it is projected to decrease in eight euro area countries (Cyprus, Portugal, Spain, Estonia, Greece, Italy, France and Latvia). By contrast, the cost of health and long-term care is projected to increase in all euro area countries.

**Compared with the 2012 Ageing Report[2], the projected increase in total ageing costs has been considerably revised downwards from 3.5% to 1.5% of GDP over the projection horizon.** Ageing cost projections for Luxembourg, France and Greece in particular have been substantially revised downwards (by at least 4.5 percentage points of GDP over the period 2013-60). A similar picture emerges for the change in pension costs, which have been revised downwards by 1.2 percentage points of GDP for the euro area compared with the previous report.[3]

**The downward revision of pension cost projections seems to be largely driven by the more favourable demographic and macroeconomic assumptions, rather than genuine reforms.** While the underlying assumptions explain up to two-thirds of the revisions, the impact of new

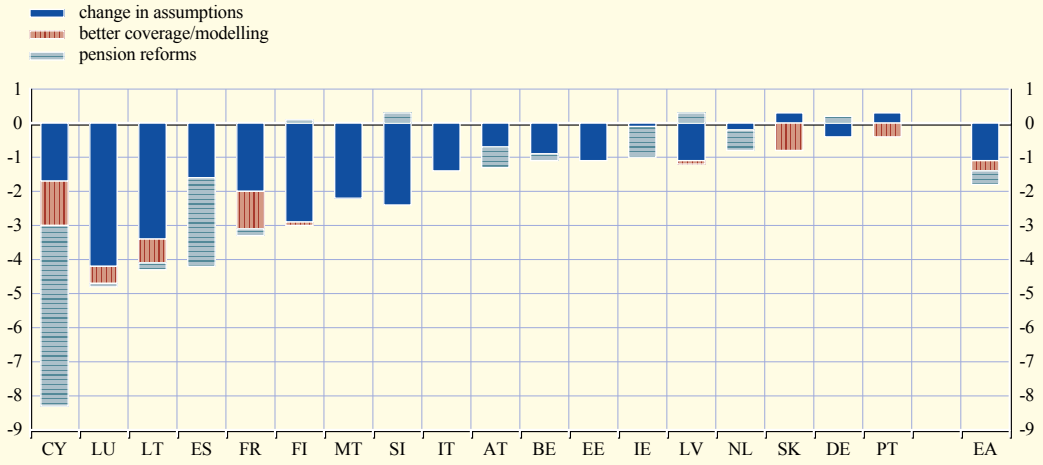
1 Pension expenditure accounts, on average, for almost half of total ageing costs, followed by health care (one-quarter) and education (one-fifth), while the relative weights of long-term care and unemployment benefits are more limited.

2 See also the box entitled "Fiscal challenges from population ageing: new evidence for the euro area", *Monthly Bulletin*, ECB, Frankfurt am Main, July 2012.

3 The figures reported for the 2012 Ageing Report are shown for the same time period (2013-60) and include the impact for several countries (Belgium, Spain, Cyprus, Latvia, the Netherlands, Slovenia and Slovakia) of the peer-reviewed pension reforms conducted after the finalisation of the 2012 report. Thus, without the updated figures from the 2012 report, the difference to the previous report would have been even larger.

## Chart C Breakdown of revision to pension cost change

(percentage points of GDP; change between 2012 and 2015 Ageing Reports)




Source: 2015 Ageing Report.
Notes: 2012 Ageing Report projections have been updated with the peer-reviewed projections of those euro area countries that have conducted pension reforms in the past three years (Belgium, Latvia, the Netherlands, Slovenia and Slovakia), with the exception of Spain and Cyprus, for which only the original 2012 report figures are available for this breakdown. Figures are based on European System of Accounts 1995 (ESA 95) data. The breakdown for Greece is not available. "Change in assumptions" refers to changes in pension costs owing to different demographic and macroeconomic assumptions. "Better coverage/ modelling" refers to changes in pension costs owing to improved coverage of the national pension projections and/or improved modelling techniques.

pension reforms seems to be rather limited on average (see Chart C).[4] The new demographic assumptions seem, on average, to be responsible for around one-third of the downward revisions of pension dynamics, as suggested by, among other things, a sharp downward revision to the change in the old age dependency ratio (of almost 4 percentage points between 2013 and 2060) compared with the previous report.[5] This factor seems to be particularly relevant for Lithuania, Latvia, Luxembourg, Malta and Slovenia. Furthermore, the better macroeconomic assumptions compared with the previous report – in particular the more pronounced decline in the unemployment rate (of 2.4 percentage points compared with the 2012 report) – seem to strongly contribute to the downward revision of the pension projections (see Chart D). The labour market effect is particularly pronounced for Spain, Italy, Cyprus, Greece and Portugal.

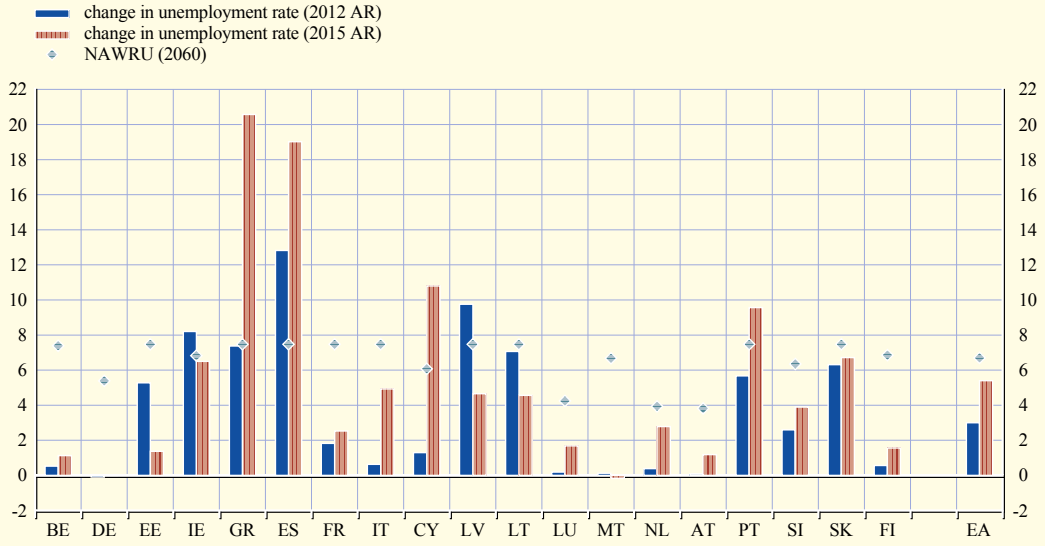
**The new ageing cost projections for several countries are exposed to substantial adverse risks as they rely on favourable underlying macroeconomic assumptions.** In particular, the assumption that total factor productivity (TFP) growth, which has fallen substantially during the crisis, will recover to a growth rate of 1% in the long run appears optimistic for several countries in the absence of substantial growth-enhancing reforms. This also holds from a historical perspective. During the period 1999-2012, TFP growth was on average around 0.7%, with considerably lower TFP growth rates in Belgium, Spain, Italy, Cyprus, Luxembourg and Portugal (see Chart E). Moreover, the assumption that the unemployment rate will converge downwards to a long-run EU average of not more than 7.5% by 2060 (the average euro area unemployment rate is projected to be 6.7% in 2060) is only plausible if substantial labour market

4 For Cyprus and Spain Chart C shows a significant fall in pension costs due to pension reforms. In contrast to the other euro area countries which have conducted pension reforms in the past three years (Belgium, Latvia, the Netherlands, Slovenia and Slovakia), the peer-reviewed, updated projector are not available for Cyprus and Spain for the breakdown shown in Chart C.

5 The demographic assumptions are based on the EUROPOP2013 population projections, which were published by Eurostat in April 2014.

## Chart D Change in the unemployment rate

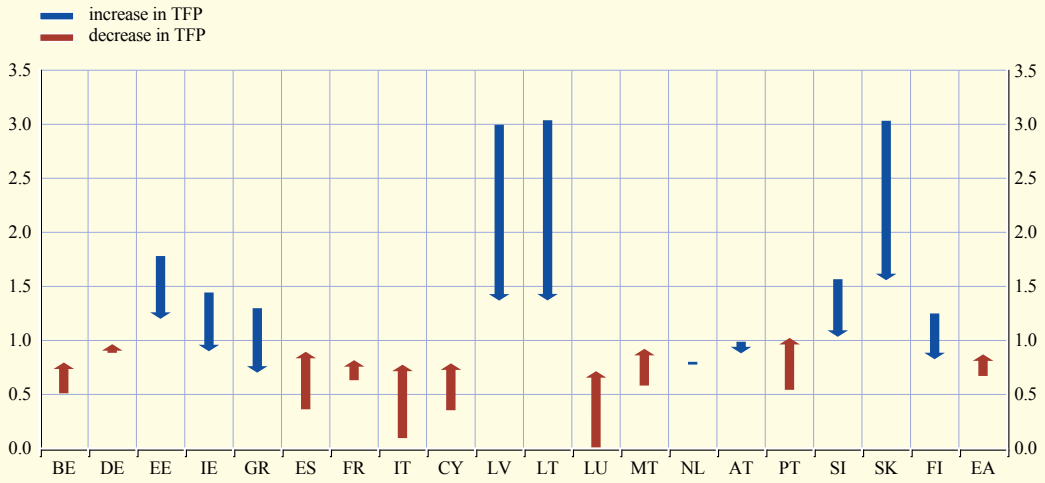
(percentages, 2013-60)




Source: 2015 Ageing Report.
Notes: A positive value for the change in the unemployment rate indicates a decline in the unemployment rate between 2013 and 2060. The values shown from the 2012 Ageing Report are recalculated for the period 2013-60. The diamonds indicate the non-accelerating wage rate of unemployment (NAWRU) level in 2060 (maximum level at 7.5%).

## Chart E Change in total factor productivity growth

(percentage change between 1999-2012 and 2013-60 averages)




Sources: 2015 Ageing Report and Eurostat.
Notes: Change in TFP growth rate between historical averages (1999-2012) and projection averages (2013-60). Blue arrows indicate a decline in TFP growth compared with historical averages, whereas red arrows indicate an increase in TFP growth compared with historical averages.

reforms are enacted. The decline in unemployment assumed in the report is particularly strong for Greece, Spain, Cyprus and Portugal (around 10 or more percentage points between 2013 and 2060) (see Chart D). With these assumptions, which are prone to a high degree of uncertainty,

the Ageing Report deviates from the standard (prudent) practice of basing projections on "no policy change" assumptions. In fact, if these assumptions did not materialise as expected, this could result in substantially higher ageing costs for the countries concerned.

**There are also risks relating to the reversal of implemented pension reforms.** The report assumes that all pension reforms that have been legislated for in recent years will be fully implemented. However, a reversal of past reforms cannot be ruled out, as indicated by recent discussions in some countries.

**Overall, despite the more favourable ageing cost projections for many countries, further reform efforts are needed to curb the increase in the costs of ageing.** The new ageing cost projections for several countries are exposed to adverse risks, as they depend on very optimistic assumptions for productivity and labour market developments. Without reforms to reduce structural unemployment and raise potential growth, ageing costs for these countries would be substantially higher. Thus, it would be misleading to interpret the new ageing cost projections as a sign of less urgency to foster countries' reform efforts.

Box 8

## THE EFFECTIVENESS OF THE MEDIUM-TERM BUDGETARY OBJECTIVE AS AN ANCHOR OF FISCAL POLICIES

**By the end of April 2015 all euro area countries not subject to an EU-IMF financial assistance programme had to submit their stability programme updates to the Ecofin Council and the European Commission.** In line with the preventive arm of the Stability and Growth Pact (SGP), these updates outline governments' budgetary strategies for the current year and at least the following three years. They also specify countries' medium-term budgetary objectives (MTOs) and planned progress towards them. Based on an assessment of the stability programmes, the European Council will endorse country-specific recommendations for fiscal policies on 25-26 June. These recommendations will take into account the January 2015 Commission Communication on flexibility within the SGP[1], which provides new guidance on the fiscal efforts required to achieve the MTOs. Against this background, this box reviews the effectiveness of the MTO as an anchor of fiscal policies under the preventive arm of the SGP.

**The medium-term budgetary objective is the cornerstone of the preventive arm of the SGP.** The MTO was introduced with the reform of the SGP in 2005 and reflects the budgetary target of governments over the medium term. It is defined in structural terms, i.e. corrected for the impact of the economic cycle and temporary measures.[2] MTOs are subject to regular updates every three years to reflect the latest estimates of the economic and budgetary costs of ageing, which are published in the triennial "Ageing Report"[3]. The SGP's preventive arm requires countries to make appropriate progress towards their MTO each year and, once they have achieved it, to maintain this structural budget balance. Specifically, the SGP foresees a benchmark structural adjustment of 0.5% of GDP towards the MTO, with higher adjustments in good economic times and lower ones in bad economic times. At the same time, the preventive arm regulation allows temporary deviations from a country's MTO, or the adjustment path adopted to achieve it, to take account of the implementation of major structural reforms that have direct, long-term positive budgetary effects, provided that the country returns to its MTO within the stability programme horizon.

**The track record of achieving MTOs is poor.** Even though the MTOs have been part of the EU's fiscal framework for ten years now, most countries have not achieved them in any single year during this time period. Furthermore, euro area countries have regularly postponed the deadline for achieving them, making MTOs "moving targets" instead of an anchor for budgetary planning. As a consequence, the euro area entered the financial crisis with a sizeable structural deficit[4], which limited the scope for counter-cyclical policies and prevented automatic stabilisers from working freely.

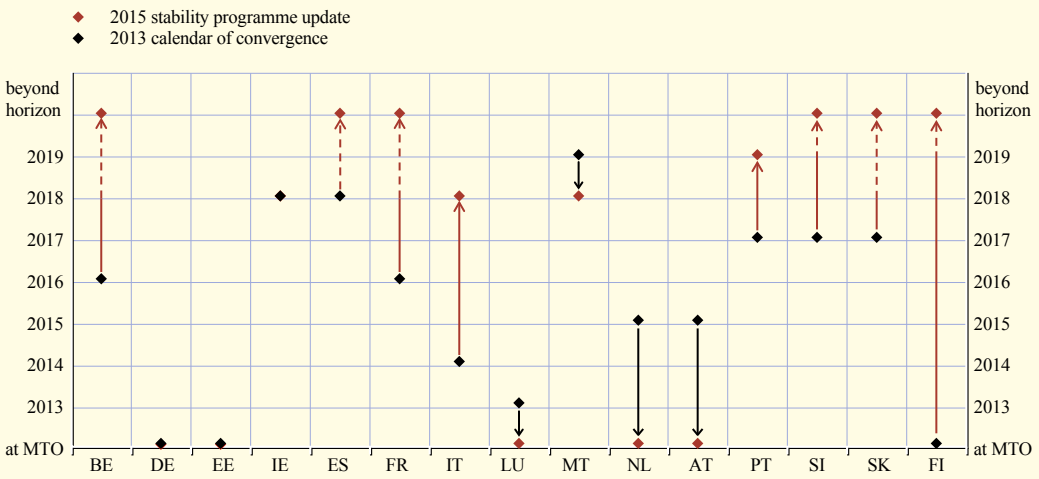
1 For further details, see the box entitled "Flexibility within the Stability and Growth Pact", *Economic Bulletin*, Issue 1, ECB, February 2015.
2 MTOs are set by Member States according to country-specific circumstances. They must respect minimum values and are designed to serve three goals: (i) Member States maintain a safety margin that prevents them from breaching the 3% Maastricht Treaty deficit reference value during cyclical downturns; (ii) Member States' debts are sustainable taking into consideration the economic and budgetary impact of ageing populations; and (iii) Member States have room for budgetary manoeuvre, in particular when it comes to preserving public investment.
3 See also Box 7 of this issue of the Economic Bulletin, entitled "The 2015 Ageing Report – How costly will ageing in Europe be?".
4 The structural balance is also determined by the unobservable output gap, which is generally subject to considerable revisions over time. The output gap is estimated to have had a negative real-time bias of around 1% of GDP over the 2003-13 period, which also implies an overestimation of the structural balance in real time. See also Kamps, C., Leiner-Killinger, N., Sondermann, D., De Stefani, R. and Rüffer, R., "The identification of fiscal and macroeconomic imbalances – unexploited synergies under the strengthened EU governance framework", *Occasional Paper Series*, No 157, ECB, Frankfurt am Main, November 2014.

**The poor track record regarding MTO compliance was intended to be addressed as part of a significant reform of the EU fiscal governance framework**. Given the insufficient enforcement of compliance with the structural effort requirements under the SGP's preventive arm, in 2011 the six-pack reforms[5] further reinforced it by defining a "significant deviation" from the adjustment path towards an MTO that can eventually lead to financial sanctions being imposed on a country. In 2012 the Treaty on Stability, Coordination and Governance in the Economic and Monetary Union (TSCG) made MTOs more ambitious: signatory euro area countries commit to MTOs not lower than -0.5% of GDP (compared with MTOs not lower than -1% of GDP before), unless their debt level is significantly below 60% of GDP and the risks to long-term sustainability are low. Furthermore, in 2013 the "calendars of convergence", i.e. country-specific time frames for achieving MTOs by a specified year, were put forward by the Commission as a follow-up to the TSCG.[6] The correction mechanism provided for in the TSCG, which should be triggered automatically at the national level in the event of a "significant deviation" from the MTO or the adjustment path towards it, was expected to ensure rapid convergence of countries towards their respective MTOs.

**However, available evidence suggests that compliance with the MTOs has not significantly improved over recent years (see chart).** Notably, MTO deadlines as set in the 2015 stability programmes are, for a large number of countries, further in the future than prescribed in the

**Year of achieving the MTO as recommended in the 2013 calendar of convergence and as implied by the 2015 stability programmes**

(as recalculated by the European Commission)




Source: 2015 stability programme updates, Commission staff working documents.
Notes: The chart compares the deadlines that the calendars of convergence set in 2013 for achieving MTOs with the year in which they are expected to be achieved as set out by the 2015 stability programme updates. The years of achieving the MTOs are based on the structural balances outlined in the stability programmes as recalculated by the Commission using the commonly agreed methodology and taking into account the 0.25% compliance margin. Consequently, the year of achieving the MTO as planned within a stability programme may differ from the year it is expected to be achieved according to the Commission calculations. For example, Portugal plans to reach its MTO in 2016, Italy and Slovakia in 2017, France in 2018 and Spain in 2019. For MTOs that are planned to be reached "beyond horizon" no recalculated structural balances are available. "Beyond horizon" denotes a time frame beyond the final year included in the 2015 stability programme, which is 2018 for Belgium, Spain, France and Slovakia, and 2019 for Finland. The dotted line thus reflects the period beyond the programme horizon. For Ireland the deadline has not changed.

5 Five regulations and one directive on fiscal and macroeconomic surveillance in the EU.
6 The deadlines for achieving the MTOs were set on the basis of the medium-term budgetary plans presented in the 2013 update of the stability and convergence programmes and in line with the SGP. See European Commission, "Report on public finances in EMU 2013", Part 1, Annex 1, *European Economy*, Issue 4, European Commission, Brussels, 2013.

2013 calendars of convergence. The Commission Communication on flexibility within the SGP released earlier this year may entail a slowdown in countries' progress towards the MTOs.[7] This clarified but also extended the SGP's flexibility as regards the application of the rules in three major areas: (i) cyclical conditions, (ii) structural reforms and (iii) government investment. When eligible under the structural reform and investment clause, countries are allowed to deviate from the adjustment path towards their MTOs.[8] For example, in their 2015 update of the stability programmes, Latvia and Italy applied to be considered under the structural reform clause for 2016.[9] Latvia was not granted a deviation under the clause owing to the absence of a sufficient safety margin towards the 3% deficit value. In the case of Italy, the European Commission allowed it to temporarily deviate by 0.4% of GDP from the required adjustment towards its MTO in 2016, after a zero adjustment requirement in 2014 and a reduced requirement in 2015 based on changes in the treatment of cyclical conditions applied by the Commission in spring 2014 and January 2015, respectively. Lithuania applied for the pension reform clause, but its eligibility will depend on Eurostat's confirmation of the systemic nature of the reform. Other countries, e.g. Slovakia, may benefit from the cyclical conditions clause, as their adjustment requirements have been lowered.

**If used excessively, SGP flexibility could lead to further sizeable and long-lasting deviations from the adjustment path towards the MTOs, which could increase risks to debt sustainability.** It is therefore essential to avoid the "moving-target syndrome" from which the preventive arm of the SGP suffered before the crisis. If euro area countries fail to restore fiscal buffers in a timely manner, they will be ill-prepared for adverse economic shocks, which is precisely when fiscal stabilisation is most needed. The current environment of strengthening economic recovery and favourable financial conditions should be used to accelerate progress towards MTOs. This would increase the resilience of the euro area economy.

7 On 13 January 2015 the European Commission issued a Communication entitled "Making the best use of the flexibility within the existing rules of the Stability and Growth Pact", see http://ec.europa.eu/economy_finance/economic_governance/sgp/pdf/2015-01-13_communication_sgp_flexibility_guidelines_en.pdf.
8 For further details, see the box entitled "Flexibility within the Stability and Growth Pact", op. cit.
9 In its 2015 convergence programme update, Romania applied to be considered under the structural reform clause, but its application has not yet been accepted owing to an absence of sufficiently detailed information.

# ARTICLES

# THE ROLE OF THE CENTRAL BANK BALANCE SHEET IN MONETARY POLICY

*This article discusses the use of the central bank balance sheet as a monetary policy tool, focusing in particular on the experience of the ECB but also reporting on that of other monetary authorities. Since the financial crisis started in 2007-08 central banks have used their balance sheets to perform a variety of interventions, altering their size and composition to varying degrees. These interventions include operations to provide "funding reassurance" to counterparties; credit easing measures to enable or improve the transmission of the monetary policy stance in the presence of market impairments; and large-scale purchases of securities to provide additional monetary policy accommodation at times when short-term nominal interest rates are at their effective lower bound.*

*In pursuit of its price stability mandate, the ECB has implemented all of these measures, including large-scale purchases of public sector securities with the introduction of the expanded asset purchase programme earlier this year. The use of the Eurosystem balance sheet has thus evolved from a relatively passive approach, with liquidity provision being determined by the needs of Eurosystem counterparties, to more active management of the size and composition of balance sheet assets in order to ensure the appropriate degree of monetary accommodation.*

## 1 INTRODUCTION

**The ECB's asset purchase programmes have marked a more active use of the Eurosystem balance sheet in pursuit of the ECB's price stability mandate.** In September and November 2014 the ECB began to implement purchases of covered bonds and asset-backed securities (ABS) respectively. In January 2015 it decided to expand the asset purchase programmes to include secondary market purchases of securities issued by the public sector in the euro area. These purchases are a further instance of how changing the size and composition of the Eurosystem balance sheet is used as an instrument in pursuit of the ECB's price stability mandate.

**Throughout the crisis central banks around the world moved beyond their traditional operating frameworks to make use of their balance sheets as a monetary policy tool**. Monetary authorities have deployed their balance sheets when liquidity shortages and market impairments, resulting from elevated liquidity and credit risk premia, impeded the transmission of the intended monetary policy stance; and when a further easing of the stance was needed at times when short-term nominal interest rates were at their effective lower bound. The explicit and active calibration of the size and composition of the central bank balance sheet as a monetary policy tool has in many respects been novel, since within contemporary central bank operating frameworks – notwithstanding all the differences in economic and financial structures and central banking traditions across jurisdictions – monetary authorities primarily pursue their mandates through the setting of an operational target for a short-term interest rate. Within such frameworks, the balance sheet of the central bank plays a subordinate role.

**This article discusses the role of the balance sheet of a central bank as an instrument of monetary policy,**[1] **focusing in particular on the policies of the ECB.** Section 2 provides an overview of the different ways in which monetary authorities use their balance sheets. Section 3

1 The central bank balance sheet is a financial statement that records assets and liabilities resulting from monetary policy instruments and autonomous factors (for example, government deposits and banknotes). Monetary policy instruments are those financial contracts that the central bank enters into in pursuit of its goals. It is the different types of financial contract – for different nominal amounts – that have implications for financial market prices and the economy, rather than the central bank balance sheet per se. This article nonetheless follows established practice and refers to the central bank balance sheet as an instrument of monetary policy.

focuses on the euro area experience, while a box describes recent developments in the Eurosystem balance sheet. Section 4 concludes.

## 2 THE CENTRAL BANK BALANCE SHEET AS A MONETARY POLICY INSTRUMENT

### 2.1 THE CENTRAL BANK BALANCE SHEET: FROM SIDESHOW TO POLICY INSTRUMENT

Monetary policy attempts to influence broad financial and macroeconomic conditions in order to achieve the goals that the central bank has been tasked with in its mandate. This is done by varying the monetary policy stance – the contribution monetary policy makes to economic, financial and monetary developments.

**In "normal" times the stance of monetary policy is signalled by the price of central bank reserves**. Within most contemporary central bank operating frameworks, the monetary policy stance is very often revealed by the price at which banks can trade central bank reserves in the interbank market, which is, in turn, influenced by the price at which central banks make these reserves available to banks. Within such operating frameworks, the central bank injects reserves into the banking system according to banks' demand in order to steer the interbank interest rate towards a level that is consistent with the intended monetary policy stance.

**Consequently, in "normal" times the composition and size of the central bank balance sheet contain limited information on the degree of monetary accommodation provided**. The size of the balance sheet results passively from the need to steer the short-term interest rate(s) in line with the desired stance. The quantity of liabilities – as well as assets – and hence the size of the balance sheet is largely determined by the demand for funds on the part of the central bank's counterparties, which is, in turn, determined by the liquidity needs of the banking system. Put differently, the central bank must supply, inelastically, the quantity of reserves required by the banking system in order to control the short-term interest rate. The composition of the assets and liabilities on the balance sheet reflects institutional characteristics of central bank liquidity management, including collateral policies and modalities of liquidity provision and absorption. In short, when the instrument of monetary policy is the short-term interest rate, the size and composition of the central bank balance sheet do not provide information about the monetary policy stance.[2]

**With the advent of the financial crisis, central banks began using their balance sheets in different ways – some of which were novel, at least in the contemporary context, while others were in line with traditional central bank tasks and practices**. Faced with the strains and risks of the financial crisis, central banks took one or more of the following actions:

- increasing liquidity provision to their banking systems elastically, i.e. accommodating banks' increased demand for liquidity, and modifying the modalities of liquidity provision to give funding reassurance, in some cases by also providing term lending;
- launching direct lending operations for the non-bank private sector or purchasing private sector assets;

2 This is not the case for central banks with operating frameworks that involve some degree of active management of the exchange rate. In these cases, both the total size of the assets and the composition of the assets and liabilities may provide information about the desired stance of monetary policy.

- starting to purchase medium and long-dated public sector securities, or securities guaranteed by governments, on a large scale;

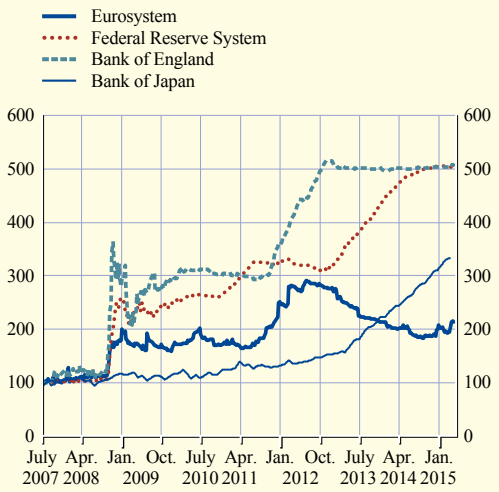
- offering explicit verbal guidance on the evolution of policy in the future, including indications about the future use of the central bank balance sheet if specific developments materialise.

**All of these actions involve – although to varying degrees – an expansion in the size of the central bank balance sheet and a modification of its composition** (see Chart 1). However, caution is required when comparing central bank balance sheets across jurisdictions and also when comparing balance sheets of the same jurisdiction over time. As discussed in this article, a unit of liquidity will have very different economic effects depending not only on the financial structures and central bank operating procedures in place, but also on the use to which the central bank balance sheet is put – that is, its use as an instrument to address specific policy needs.

**Three main reasons for the increased use of central banks' balance sheets can be identified**: (1) the need to respond to financial stress and manage financial crises – in line with central banks' traditional function as the ultimate provider of funding reassurance for the banking system; (2) the need to enable or improve the transmission of the intended monetary policy stance in the presence of market impairments; and (3) the need to provide additional monetary accommodation – that is, to further ease the stance – by exerting downward pressure on long-term interest rates when short-term nominal policy rates have been reduced to their effective lower bound. In principle, these three objectives are complementary, while in practice they may be closely related. In any case, the measures deployed for any one of the above reasons can have very similar implications for the monetary policy stance. For example, by compressing the spreads between the market costs of borrowing and the risk-free interest rates, thus allowing a better pass-through of the stance, transmission-enhancing measures can also be regarded as increasing the degree of monetary accommodation.

**Chart 1 Central bank balance sheets since the crisis: total assets**

(index: H1 2007 = 100)




Sources: ECB, Federal Reserve System, Bank of England and Bank of Japan.

**The discussion in this article will distinguish between "passive" and "active" uses of the central bank balance sheet, while announcements about potential future balance sheet measures are termed "contingent balance sheet policies"**.[3] The fully elastic supply

3 There are many different taxonomies of central banks' use of their balance sheets. Bernanke and Reinhart (Bernanke, B. and V. Reinhart, "Conducting Monetary Policy at Very Low Short-Term Interest Rates", *American Economic Review*, Vol. 94, No 2, 2004, pp. 85-90) distinguish policies that affect the size of the central bank balance sheet from those that affect the composition of the asset side. Borio and Disyatat (Borio, C. and P. Disyatat, "Unconventional Monetary Policies: An Appraisal", *BIS Papers*, No 292, 2009) emphasise the effect on the private sector balance sheet – which is a mirror image of the effect on the central bank's balance sheet. Other possibilities include the type of risk for the central bank's balance sheet that results from its interventions (see Goodfriend, M., "Central Banking in the Credit Turmoil: An Assessment of Federal Reserve Practice", *Journal of Monetary Economics*, Vol. 58, No 1, 2011, pp. 1-12,); the locus of the central bank intervention, that is, the market targeted; the purpose of the intervention – what type of market imperfection the central bank is addressing – and hence the function it takes on by virtue of its intervention (e.g. market-maker of last resort); and the transmission channels of its policies.

of central bank liquidity to its counterparties in response to heightened demand induced by financial stress is considered in this article to be a passive deployment of the central bank balance sheet. This categorisation seems apt, since, in such cases, the consequences for the balance sheet of the monetary authority depend solely on the demand for central bank credit on the part of its counterparties. Active balance sheet policies, on the other hand, involve central bank measures that deliberately attempt to steer economic conditions by influencing specific financial market prices. The article identifies two types of active policy. "Credit easing" measures are targeted interventions that aim to influence credit spreads by altering the composition of the central bank balance sheet in order to improve the transmission of the desired monetary policy stance; and large-scale asset purchases (often termed "quantitative easing") are intended to lower long-term interest rates, when short-term nominal interest rates are at their effective lower bound, by increasing the size of the balance sheet, with the ultimate aim of achieving a comprehensive easing of the monetary policy stance. Finally, contingent balance sheet policies consist in a commitment by the central bank to use its balance sheet in certain ways, if specific circumstances materialise.

## 2.2 PASSIVE CENTRAL BANK BALANCE SHEET POLICIES: PROVIDING LIQUIDITY AS THE SYSTEMIC PROVIDER OF FUNDING REASSURANCE IN RESPONSE TO FINANCIAL STRESS

**Financial stress leads to increased demand for liquidity, which the central bank accommodates in an attempt to arrest the potentially disruptive deleveraging process that would otherwise ensue.** In periods of systemic stress private financial intermediation becomes dysfunctional. In particular, the ability of the interbank market to efficiently (re)distribute central bank funds across counterparties diminishes or even breaks down completely owing to market fragmentation and precautionary "hoarding" of liquidity. In such cases, the central bank may need to provide reserves in excess of the "regular" liquidity needs arising from "autonomous factors" (e.g. demand for banknotes) and, if applicable, from reserve requirements, for two main purposes: first, to stabilise the banking system in accordance with the traditional role of central banks as the ultimate provider of funding reassurance; and, second, to prevent an increase in short-term interest rates above levels consistent with the desired monetary policy stance.

**Many central banks implemented such policies as part of their response to the 2007-08 financial crisis, particularly during the financial turmoil following the collapse of Lehman Brothers in September 2008**. To alleviate severe tensions in the interbank money market, central banks engaged in a number of operations as the ultimate provider of funding reassurance, providing liquidity to their respective banking sectors. This type of central bank intervention was aimed at reducing interbank market spreads, but also helped to improve overall market functioning and to restore confidence in the economy. In fact, by stabilising short-term interest rates around the level of the operational target, an unwarranted tightening of the monetary policy stance was prevented.[4]

**The central bank may also make longer-term liquidity available in order to provide funding reassurance to the banking system**. Financial stress may affect not only the market for central bank reserves – the overnight market – but also term funding markets, including term money markets and the market for unsecured bank bonds. In response to such dislocations, central banks extended the maturity of their liquidity interventions beyond "conventional" horizons. The availability of longer-term liquidity provides counterparties with the funding to match the maturity of some of their assets

4 Foreign currency swap lines between central banks – which increase the size of the central bank balance sheet as well – should also be seen in the context of funding reassurance: by making foreign currency liquidity available to their banking systems, central banks relieve funding pressures, in this case for foreign currency-denominated assets.

(offering funding reassurance). It thus insures banks against duration and rollover risk and thereby halts too rapid deleveraging. As a result, confidence effects in financial markets may be amplified. In addition, there may be important signalling effects, as this measure demonstrates the central bank's determination to act as a liquidity backstop and ensure "normal" conditions in the markets for term funding as well. The provision of funding reassurance to the central bank's counterparties may be complemented by modifying other modalities of liquidity provision, for example, broadening the pool of eligible collateral. The ECB also switched its liquidity-providing operations to fixed rate full allotment tenders, which will remain in place until at least December 2016.

**The provision of term funding combines liquidity support and credit easing**. By providing longer-term liquidity, the central bank influences conditions in the markets for term funding. Compared with the situation that would have prevailed if no policy interventions had been conducted, this lowers bank funding costs and credit spreads and is translated into looser financing conditions for final borrowers in the economy – safeguarding the transmission of the desired monetary policy stance. Therefore, this aspect of liquidity provision also has a credit easing dimension.

**Accommodating the banking system's increased demand for liquidity and providing term funding will result in a larger central bank balance sheet**. When financial stress increases counterparties' demand for reserves, the central bank has to accommodate this demand or forfeit the achievement of its operational target, which would blur the signal of its monetary policy stance. Stresses in funding markets, in turn, may interfere with the transmission of the intended stance. In both cases, the necessary increased provision of liquidity by the central bank increases the size of its assets: the monetary authority "takes intermediation onto its own balance sheet".[5]

**The limited scope of liquidity support interventions may necessitate more active deployment of the central bank balance sheet**. The overall efficacy of liquidity assistance policies is entirely dependent on counterparties' decisions regarding whether and how much to borrow. While they may be sufficient to maintain market functioning and prevent financial dislocations from generating spillovers to the economy, they afford the central bank only limited control over broad monetary conditions. In particular, they may ultimately be insufficient to prevent bank deleveraging and the resulting drag on the economy stemming from restrictive credit conditions. In such cases, the central bank may need to take more active control of its balance sheet. Many major central banks – including the ECB – have made the transition from passive to active balance sheet policies in the course of the last few years, albeit at different speeds, as economic conditions necessitated increasingly tight control over the balance sheet in order to effectively steer the monetary policy stance.

### 2.3 FROM PASSIVE TO ACTIVE CENTRAL BANK BALANCE SHEET POLICIES: CREDIT EASING

**In certain cases, providing liquidity elastically to the banking system may not be sufficient to remedy dysfunctional private financial intermediation.** Liquidity provision by the central bank, however ample, is usually available only to a subset of market participants (namely the central bank's counterparties); and even these participants may be reluctant to part with their liquidity to enter impaired markets in times of heightened risk aversion. Under such circumstances, direct central bank interventions may become necessary to improve the functioning of markets or market segments deemed crucial for the financing of the real economy.

5 The asset-side counterpart of the newly created reserves on the liability side is the credit granted to the central bank's counterparties (if monetary policy is implemented through repo operations, for example) or securities held (if monetary policy is implemented through outright purchases and sales of government securities on the open market, for example).

**Under credit easing policies, the central bank may take a more active stance on determining the composition of the assets on its balance sheet, with a view to influencing market spreads that particularly impede transmission**. In the case of central bank interventions targeted at credit easing, it is the composition of the balance sheet's asset side that is of primary importance, in the sense that the assets on the balance sheet reflect the monetary authority's intention to ease conditions in specific markets.[6] To do so, the monetary authority makes more active use of its balance sheet to improve upon or substitute for private financial intermediation, as well as to enable or enhance the transmission of the intended degree of accommodation. In this regard, credit easing policies are mainly aimed at improving financing conditions for the non-financial private sector. They achieve this by altering market spreads paid by certain borrowers and in certain markets, thus facilitating the transmission of the intended monetary policy stance in the presence of impairments to market functioning.

**Credit easing spans a diverse set of central bank interventions**. The measures taken by the central bank will depend on the specific characteristics of the impairment and the idiosyncrasies of the markets targeted, as well as more broadly on the financial structure of the economy and the set of tools available to the central bank. Credit easing measures may therefore include the provision of liquidity to financial market participants outside the usual set of central bank counterparties; the provision of liquidity – or collateral – against securities not normally accepted for use in monetary policy operations;[7] and outright purchases of assets. Thus, depending on the circumstances, credit easing interventions may, as noted above, have a great deal in common with passive liquidity support operations;[8] or may be more active, in the sense that the central bank itself calibrates the composition and possibly also the size of its assets.

**Targeted lending operations, such as those launched by the Bank of England and the ECB, also constitute credit easing measures, but have much in common with term funding interventions**. The Bank of England in July 2012, and the ECB in September 2014, launched targeted schemes aimed at boosting bank lending to the non-financial private sector in order to enhance the transmission of monetary policy.[9] Such targeted lending operations differ from the measures already discussed insofar as they contain explicit incentives for banks to extend credit, by linking the terms of the provision of long-term funding to their lending performance. In substance, targeted lending operations are credit easing measures in that they aim to lower borrowing costs for the real economy and thus strengthen transmission – in this case by easing funding conditions for banks. At the same time, targeted lending measures have a great deal in common with passive term funding interventions – notably, the provision of central bank credit for a lengthy period of time and the dependence of lending volumes in these operations on counterparty demand.

**It is neither necessary nor sufficient for short-term nominal interest rates to have reached their lower bound in order for credit easing to have beneficial effects for the economy**. Rather,

6 In the case of "pure credit easing", the central bank finances the acquisition of the assets in question through sales of other assets, changing the composition of the asset side of the balance sheet but leaving its size unaffected. The most prominent example of a pure credit easing policy is probably the Federal Reserve System's Maturity Extension Program, in which longer-term Treasury securities were purchased in exchange for short-term ones.

7 In such cases, central banks are sometimes said to have acted as "market-makers of last resort" (see, for example, Tucker, P., "The repertoire of official sector interventions in the financial system: last resort lending, market-making, and capital", speech at the Bank of Japan 2009 International Conference, "Financial System and Monetary Policy: Implementation", May 2009).

8 One way to demarcate credit easing interventions from liquidity support operations is that the former involve direct interventions in "unconventional" market segments – that is, transactions which, by virtue of the counterparty or asset class involved, are outside the usual modus operandi of the central bank – while the latter are confined to the central bank's usual counterparties.

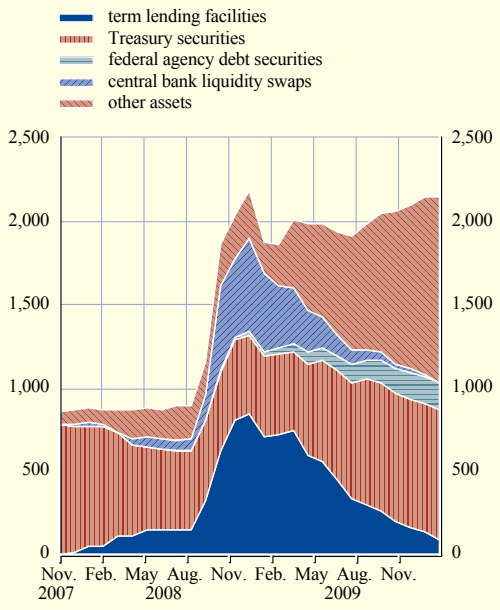
9 For more details, see Churm, R., A. Radia, J. Leake, S. Srinivasan and R. Whisker, "The Funding for Lending Scheme", *Bank of England Quarterly Bulletin*, Q4 2012; and the box entitled "The targeted longer-term refinancing operation of September 2014", *ECB Monthly Bulletin*, October 2014.

the usefulness of such policies depends on how important the targeted markets are for non-financial private sector financing conditions, as well as the degree of their impairment. For example, in response to credit market dislocations, the US Federal Reserve System established several facilities that extended temporary liquidity to key market segments (see "term lending facilities" in Chart 2).[10] These facilities made a substantial contribution to restoring market functioning while short-term nominal interest rates were well above their lower bound, as evidenced, for example, by the rapid decline in spreads in the commercial paper market following the Federal Reserve System's interventions under the Commercial Paper Funding Facility (see Chart 3). However, the positive effects of credit easing interventions for the economy are likely to be even greater when short-term nominal interest rates have reached their lower bound.[11]

**The transmission of credit easing policies relies on direct pass-through and, if accompanied by substantial liquidity creation, portfolio rebalancing effects**. Credit easing measures are targeted at market segments that are closely linked to private non-financial sector borrowing conditions. This link may be direct – for example in the case of interventions that ease conditions

**Chart 2 A breakdown of the simplified US Federal Reserve System balance sheet: assets**

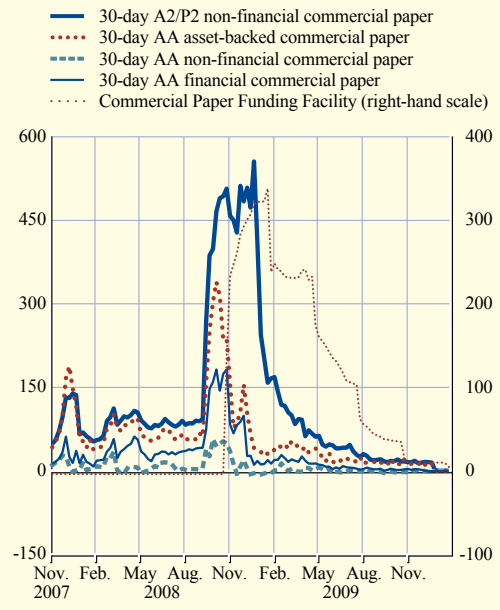
(USD billions)




Source: US Federal Reserve System.
Note: The term lending facilities comprise the Primary Dealer Credit Facility (PDCF), Term Securities Lending Facility (TSLF), Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF), Commercial Paper Funding Facility (CPFF), Money Market Investor Funding Facility (MMIFF) and Term Asset-Backed Securities Loan Facility (TALF).

**Chart 3 Commercial paper spreads and US Federal Reserve System interventions**

(commercial paper spreads in basis points relative to the one-month OIS rate; USD billions)




Sources: US Federal Reserve Board and Curdia and Woodford (2011), working paper version.
Note: The data for the Commercial Paper Funding Facility refer to outstanding amounts.

10 These facilities mostly consisted in the provision of term liquidity through collateralised lending to Federal Reserve System counterparties or other market participants. Thus, they constitute "hybrid" interventions that straddle term funding and credit easing.

11 See Curdia, V. and M. Woodford, "The Central-Bank Balance Sheet as an Instrument of Monetary Policy", *Journal of Monetary Economics*, Vol. 58, No 1 , 2011, pp. 54-79; and Gertler, M. and P. Karadi, "A Model of Unconventional Monetary Policy", *Journal of Monetary Economics*, Vol. 58, No 1, 2011, pp. 17-34.

in commercial paper markets – or indirect, where the central bank's action influences market prices of assets that, in turn, affect the price applied to the underlying credit – as in the case of interventions in markets for products securitised on loans to households or companies. Prominent examples of the latter are the Federal Reserve System's purchases of mortgage-backed securities (MBS), and the ECB's purchases of ABS and covered bonds. As the prices of such assets are bid up, banks respond to the market incentives by creating more saleable securities, and thus more loans to collateralise them, thereby expanding the volume and lowering the price of credit for final borrowers. Furthermore, as these interventions were financed through the creation of central bank reserves, the liquidity generated resulted in positive spillovers into other markets and securities – such portfolio rebalancing effects are discussed in more detail in the next section.

**Credit easing may thus also have a "quantitative" impact on the central bank balance sheet, making it difficult in practice to draw a sharp distinction between credit easing measures and "quantitative" policies**, as the former have tended to be financed by the creation of central bank reserves (e.g. the purchases of MBS in the United States, and the targeted longer-term refinancing operations (TLTROs), the ABS purchase programme and the third covered bond purchase programme in the euro area). Indeed, unsterilised credit easing interventions, if conducted on a sufficiently large scale, can have significant macroeconomic effects. For example, while the US Federal Reserve System's purchases of MBS provided a catalyst for a drastic fall in spreads and a restoration of market functioning, their ultimate consequence was the stabilisation of the US housing market – with the concomitant macroeconomic benefits.[12]

## 2.4 ACTIVE BALANCE SHEET POLICIES: LARGE-SCALE ASSET PURCHASES WITH SHORT-TERM NOMINAL INTEREST RATES AT THEIR LOWER BOUND

**With short-term nominal interest rates at their lower bound, central banks have embarked on large-scale asset purchases to ease the monetary policy stance further**. While credit easing policies also ease the monetary policy stance, simply easing conditions in particular markets may not suffice to achieve the degree of accommodation necessary for the central bank to fulfil its mandate. Rather, this may require a tool which, by design, will reliably deliver a broad easing of financial conditions. To achieve this objective, central banks have used large-scale asset purchases. They are thought to affect financial market prices via two main avenues:[13] the portfolio balance channel, as the liquidity generated through the asset purchases is used by investors to reallocate their portfolios, thus resulting in spillovers that affect prices in a multitude of market segments not addressed by central bank interventions; and the signalling channel, whereby the expansion in the size of the balance sheet is also a signal for the path of the policy rate in the future and hence for the future monetary policy stance. Through this channel, expectations of a looser monetary policy stance in the future will ease the current stance.

**The portfolio balance channel relies on imperfect substitutability of assets in private sector portfolios**. In the presence of segmentation between different markets, for example, owing to imperfect substitutability of assets and limitations on arbitrage, changes in the net supply of a security in the market will affect the price of that asset as well as, potentially, the price of broadly similar instruments. For example, investors in government bonds may confine themselves to

12 See, for example, Krishnamurthy, A. and A. Vissing-Jorgensen, "The Effects of Quantitative Easing on Interest Rates: Channels and Implications for Policy", *Brookings Papers on Economic Activity*, autumn 2011, pp. 215–287; and Walentin, K., "Business Cycle Implications of Mortgage Spreads", *Journal of Monetary Economics*, Vol. 67, 2014, pp. 62-77.

13 This article only discusses the transmission of large-scale asset purchases to financial market prices. For a review of the transmission from asset prices to spending, see, for example, Bowdler, C. and A. Radia, "Unconventional Monetary Policy: the Assessment", *Oxford Review of Economic Policy*, Vol. 28, No 4, 2012, pp. 603-621.

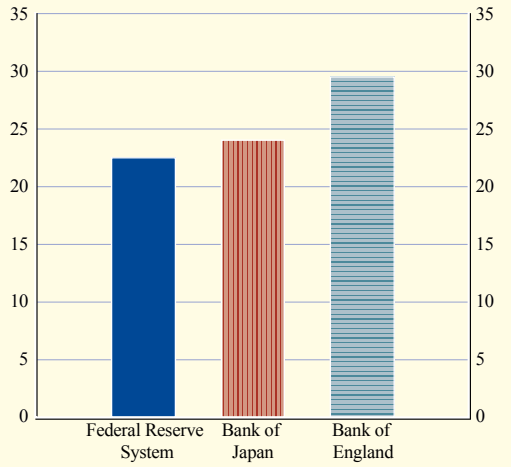
particular segments of the yield curve for institutional or other reasons. Central bank purchases that create a relative shortage of, for example, long-term bonds, will increase prices and lower yields. In addition, investors will seek to rebalance their portfolios away from "cash" (central bank reserves) and into riskier assets. To induce this investor response, the risk characteristics (i.e. the liquidity, duration or credit risk characteristics) of the assets purchased by the monetary authority must differ sufficiently from those of central bank reserves. For example, central bank purchases of riskless, liquid government securities against reserves can only be effective if they take duration risk out of investor portfolios – necessitating purchases of government debt with a long residual maturity. In this way, an expansion of the central bank's balance sheet may provide additional accommodation through lower long-term yields and higher prices for a wide variety of assets, resulting in looser financial conditions.

**The portfolio balance channel is a function of the size of central bank interventions**. In principle, the portfolio balance channel is not tied to purchases of specific classes of assets. Rather, it emphasises the importance of quantities of securities for the pricing of assets.[14] This is because, in contrast to targeted central bank interventions, which have an immediate impact on credit conditions owing to the direct pass-through effect discussed above, the portfolio balance channel is less direct: it requires a spillover process whereby newly generated liquidity is passed from one market to another before it influences prices that are closely linked to broad credit conditions. Therefore, achieving meaningful macroeconomic effects – easing the monetary policy stance – requires substantial "scaling" of purchases.

**This in part explains the size of some asset purchase programmes, as well as the primary asset of choice for such programmes: government securities**. Government bond markets, in addition to their key role in the pricing of a vast array of assets in the economy, are generally sufficiently large for central banks to be able to purchase the volumes necessary to generate a broad easing of financial conditions. For instance, the US Federal Reserve System, the Bank of Japan and the Bank of England held between 22% and 30% of total outstanding debt securities of their respective sovereigns at the height of their purchase programmes (see Chart 4). In this context, therefore, the size of the asset side of the central bank balance sheet becomes a proxy for the "intensity of employment" of the portfolio balance channel and the resulting broad-based easing of financial conditions.

**Chart 4 Central bank holdings of government debt securities**

(percentages of total outstanding domestic government debt securities)




Sources: United States: Federal Reserve System, US Treasury; United Kingdom: Bank of England, Debt Management Office; Japan: Bank of Japan, Ministry of Finance.
Notes: The figures refer to government debt securities with a minimum maturity of 12 months. The reference dates are the last quarters of actual purchases (Q3 2013 for the Bank of England, Q3 2014 for the Federal Reserve System and Q4 2014 for the Bank of Japan).

**Asset purchases may also enable a central bank to send a signal about the future stance of monetary policy**. It may wish to do so either

14 See, for example, Bauer, M. and G. Rudebusch, "The Signalling Channel for Federal Reserve Bond Purchases", *International Journal of Central Banking*, Vol. 10, September 2014, pp. 233-289.

to provide additional stimulus or to better align market expectations with its intended monetary policy stance. In particular, the central bank may wish to indicate that it will keep interest rates low in the future to highlight its commitment to its mandate. Large-scale purchases of securities, such as long-term government bonds, in exchange for central bank reserves, replace long-duration assets in the portfolios of economic agents with liquidity. This may convince markets that the liquidity expansion will be long lasting, which, in turn, would influence the market pricing of term contracts. Put differently, withdrawing the large amounts of liquidity generated through the asset purchases in a short period of time may have adverse consequences for money market functioning and financial stability, making the central bank reluctant to be seen to reverse its course. By "putting its money where its mouth is", the central bank underscores its commitment to achieving its goal. In this sense, the commitment to use the balance sheet can also be seen as buttressing the forward guidance on key policy rates that some central banks have provided.[15]

**Successful signalling through the balance sheet involves both a size and a time dimension**. Using the balance sheet to demonstrate commitment is only effective when a reversal of course would be sufficiently costly. Thus, a larger balance sheet can be a proxy for the cost to the central bank of reneging on its commitment to keep policy rates low. However, since signalling revolves around the future actions of the central bank, size is not the only way to state commitment – the time dimension is also important. The intentions of the central bank can thus also be signalled via (1) the maturity of liquidity-providing operations (e.g. the ECB's three-year longer-term refinancing operations); (2) the residual maturity of the assets purchased – since the longer duration of the bond portfolio implies a higher interest rate risk and therefore a potentially higher cost of reneging on its commitment to low policy rates; and (3) the length of the period during which operations or certain operational modalities are maintained (for example, the ECB's current commitment to make liquidity available via fixed rate full allotment tenders until December 2016). In short, signalling involves information about both the current and future uses of the balance sheet. For example, the US Federal Reserve System has focused on changing " … market participants[']  … expectations concerning the entire path of the Federal Reserve System's holdings of longer-term securities".[16]

### 2.5 CONTINGENT BALANCE SHEET POLICIES

**The central bank may also commit to deploy its balance sheet if specific circumstances materialise**. Such contingent use of the balance sheet is effectively a signalling mechanism. A prominent example of a contingent balance sheet policy is the ECB's Outright Monetary Transactions (OMTs). In the case of the OMTs, the ECB committed to intervene in government bond markets to address distortions arising from the presence of unwarranted redenomination risks in order to strengthen the transmission mechanism.[17] More broadly, however, contingent balance sheet policies have been employed by central banks to provide information about the duration of purchase programmes that are subject to conditionality. Two prominent examples of this latter use of contingent balance sheet communication are the so-called LSAP-3 announcement by the Federal Reserve System in September 2012 and the ECB communication which clarified that, under its expanded asset purchase programme, "[p]urchases are intended to run until the end of

15 Indeed, mainstream asset pricing theory suggests that central bank asset purchases are ineffective when interest rates are at the lower bound, and only forward guidance can provide monetary stimulus. See Eggertson, G. and M. Woodford, "The Zero Bound on Interest Rates and Optimal Monetary Policy", *Brookings Papers on Economic Activity*, Vol. 34, No 1, 2003, pp. 139-211.

16 Yellen, J., "Challenges Confronting Monetary Policy", speech at the 2013 National Association for Business Economics Policy Conference, Washington DC, 4 March 2013.

17 In monetary policy frameworks that involve at least some active management of the exchange rate, central bank pledges to intervene in foreign exchange markets may also constitute contingent balance sheet policies. The commitment is to buy or sell foreign currency; the contingency is usually related to the value of the domestic currency reaching certain levels in foreign exchange markets.

September 2016 and, in any case, until [the Governing Council] see[s] a sustained adjustment in the path of inflation that is consistent with [its] aim of achieving inflation rates below, but close to, 2% over the medium term". The contingency for triggering such a use of the central bank balance sheet is usually current and future macroeconomic conditions (for example, the inflation outlook) in relation to the central bank's goals.

## 3 THE EUROSYSTEM BALANCE SHEET

**Since the start of the crisis the ECB has taken several unconventional measures that have altered both the size and composition of the Eurosystem balance sheet in pursuit of price stability.** Over the recent period the nature of these measures has changed and in part resembles the actions of other major central banks. The size and composition of the Eurosystem balance sheet has evolved over time on the basis of the policy purpose and the types of instrument used.

**In the initial stages of the crisis monetary policy focused on maintaining very short-term interest rates in line with the intended monetary policy stance through liquidity support measures.** With the outbreak of the tensions in money markets, the ECB provided substantial liquidity support to the euro area banking system. In line with the classical notion of the central bank's role as the ultimate provider of funding reassurance, the short-term liquidity support aimed to prevent disruption to money market activity from spreading further and creating the conditions for a generalised banking panic and a phase of disorderly deleveraging. Ultimately, this was to ensure an efficient transmission of changes in money market conditions to other financial variables (reflecting the predominantly bank-based financing structure of the euro area economy), and, hence, to the real economy and to inflation.

**Such measures included liquidity-providing operations of various maturities and the use of fixed rate full allotment tenders in refinancing operations**. The ECB increased both the size and parameters of its liquidity-providing operations, particularly after the intensification of the crisis following the default of Lehman Brothers in September 2008. Most notably, the ECB started to provide unlimited funding to banks, conducting its refinancing operations as fixed rate full allotment tenders, which satisfies fully banks' demand for central bank liquidity against adequate collateral.[18] Reflecting the increased demand for liquidity and the full allotment procedure that increased the intermediation role of the Eurosystem, there was a gradual, passive increase in the Eurosystem balance sheet (see the box).

**During the ensuing crisis the ECB had recourse to a set of primarily bank-based measures to enhance the flow of credit.** To counter tensions in specific public and private sector debt markets, which were hampering the transmission of monetary policy, a number of measures were taken with a more targeted focus to support financial conditions and market functioning in those markets. The aim was primarily to enhance the transmission of a given stance of monetary policy, as reflected in the policy interest rates and very short-term money market rates, through recourse to a set of measures that supported credit provision to the real economy. These measures comprised funding operations with a very long duration, as well as more active use of the Eurosystem balance sheet to target specific public and private sector market segments.

18 Note that the ECB modified its collateral framework several times to ensure adequate access of counterparties to its funding facilities. Moreover, in order to address euro area banks' need to fund their foreign currency-denominated assets, the Eurosystem provided liquidity in foreign currencies, most notably in US dollars.

**Three-year longer-term refinancing operations (LTROs) were introduced to provide funding reassurance.**[19] The two LTROs conducted in December 2011 and February 2012 provided funding reassurance for banks for a significant period of time when refinancing via the usual bank funding sources was potentially impaired. While in principle a liquidity support measure, it succeeded in halting excessively rapid rates of deleveraging and thus supported the provision of credit to the real economy. With banks' participation amounting to €521 billion in net terms, the balance sheet of the Eurosystem increased significantly and the maturity of its assets lengthened (see the box).

**The ECB also undertook outright purchases targeting malfunctioning market segments that impaired the transmission of monetary policy, making more active use of its balance sheet.** Given the importance of covered bonds as a major source of funding for banks in many parts of the euro area to refinance loans to the public and private sectors, in June 2009 the ECB started to purchase euro-denominated covered bonds under two covered bond purchase programmes (CBPP1 and CBPP2). Similarly, when tensions arose in euro area government bond markets, which play an important role in the pricing of other financial assets and loans to the real economy, thereby hampering the transmission of the ECB's monetary policy stance, the ECB purchased government bonds in the context of the Securities Markets Programme (SMP).[20] Accumulated SMP purchases at their height amounted to €220 billion, while the size of CBPP1 and CBPP2 reached €60 billion and €16 billion respectively.

**Moreover, in August 2012 the ECB announced its intention to purchase government bonds in secondary markets if certain conditions were met – a contingent balance sheet policy.** It could address severe distortions in these markets, originating in particular from fears of the reversibility of the euro, through OMTs.[21] This programme commits the ECB to using the Eurosystem balance sheet to overcome this distortion, provided certain conditions are fulfilled.[22]

19 Among the relevant empirical studies are Peersman, G., "Macroeconomic effects of unconventional monetary policy in the euro area", *ECB Working Paper Series*, No 1397, 2011; Lenza, M., H. Pill and L. Reichlin, "Monetary Policy in Exceptional Times", *Economic Policy*, Vol. 25, pp. 295-339; and Gambacorta, L., B. Hofmann and G. Peersman, "The Effectiveness of Unconventional Monetary Policy at the Zero Lower Bound: A Cross-Country Analysis", *Journal of Money, Credit and Banking*, 46(4), pp. 615-642.

20 The targeted nature of the measure (that aimed to repair impaired monetary policy transmission rather than to alter the existing stance of monetary policy) was underlined by the full sterilisation of the SMP liquidity injected.

21 For further details, see the press release on the technical features of Outright Monetary Transactions published by the ECB on 6 September 2012.

22 The ECB has also provided forward guidance since July 2013, as discussed in the article entitled "The ECB's forward guidance", *Monthly Bulletin*, ECB, April 2014.

BOX

## RECENT DEVELOPMENTS IN THE EUROSYSTEM BALANCE SHEET

**The size and composition of the Eurosystem balance sheet has changed significantly over recent years as a result of unconventional monetary policy operations.** This box provides information on developments in the Eurosystem balance sheet observed since the latter half of 2011 from a market operations perspective.[1]

1 Information on prior developments in the Eurosystem balance sheet can be found, for example, in the article entitled "The ECB's non-standard measures – impact and phasing-out", *Monthly Bulletin*, ECB, July 2011; and the article entitled "Recent developments in the balance sheets of the Eurosystem, the Federal Reserve System and the Bank of Japan", *Monthly Bulletin*, ECB, October 2009.

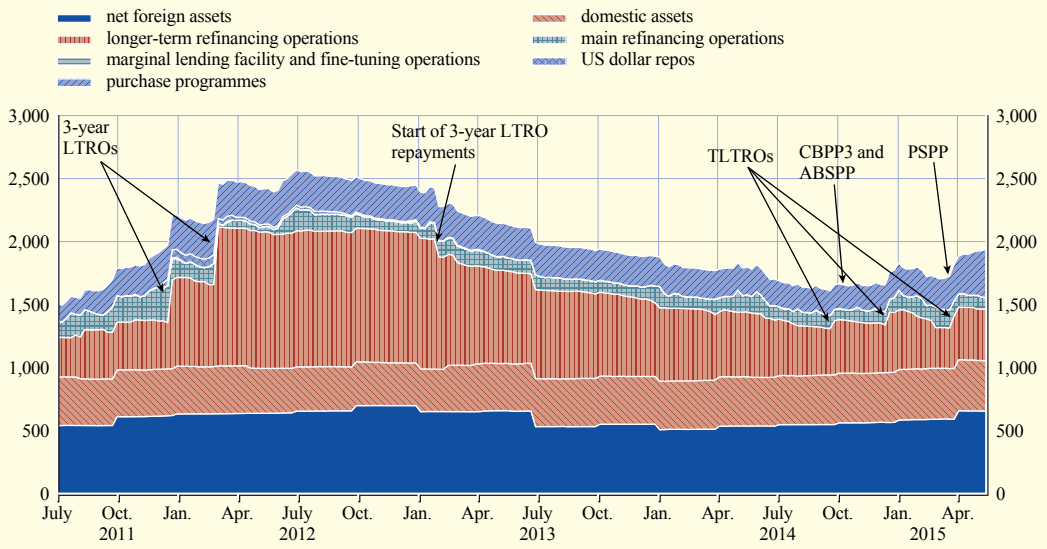
## Developments on the asset side of the Eurosystem balance sheet

**Monetary policy tools and investment portfolios are the main items on the asset side.** Monetary policy tools include short and long-term repo operations, the marginal lending facility and outright purchase operations. Investment portfolios include domestic as well as foreign assets. The Eurosystem's investment portfolios are not used for the implementation of monetary policy, except the foreign reserves of the ECB, which are available for possible foreign exchange interventions. The Eurosystem's investment portfolios are subject to restrictions decided upon by the ECB, such as maximum size limits, in order to ensure that they do not interfere with the implementation of the single monetary policy. In addition, the Eurosystem has rules restricting foreign reserve transactions that are not carried out for policy purposes, in order to ensure consistency with the exchange rate and monetary policies.[2]

**Monetary policy tools have been the main drivers of the recent significant changes in the size and composition of the Eurosystem balance sheet**. In particular, as a result of the two three-year longer-term refinancing operations (LTROs) conducted in December 2011 and February 2012, the size of the balance sheet expanded significantly. From early 2013 to September 2014 the size of the balance sheet progressively declined, as a result of the option given to banks to repay the three-year LTROs on a weekly basis. The improvement in bank funding conditions reduced banks' need to hold liquidity buffers. Since September 2014 the size of the balance sheet has halted its decline and started to increase again, owing to the launch of the targeted longer-term refinancing operations (TLTROs) and the asset purchase programmes – i.e. the third covered bond purchase programme (CBPP3), the asset-backed securities purchase programme (ABSPP) and the public sector purchase programme (PSPP). Meanwhile, investment portfolios have been relatively stable, with some fluctuations in net foreign assets mainly owing to exchange rate effects.

**Chart A A breakdown of the simplified Eurosystem balance sheet: assets**

(EUR billions)




Source: ECB.

2 See Article 31 of the Protocol on the Statute of the European System of Central banks and of the European Central Bank.

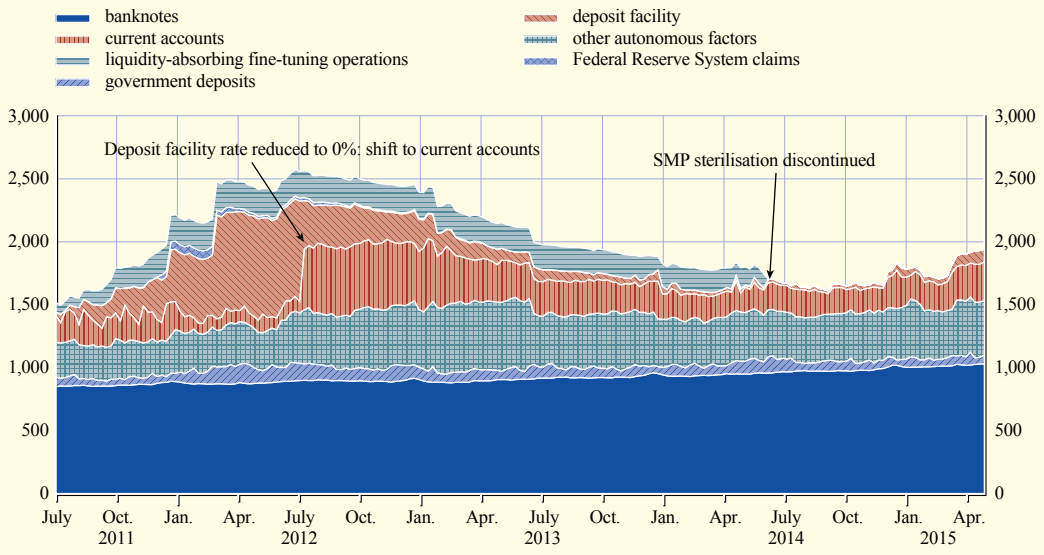
**In order to operate monetary policy effectively and to alleviate collateral constraints on its eligible counterparties, the Eurosystem has altered and expanded its eligibility criteria for the assets it accepts as collateral for its credit operations**.[3] At the same time, it has continued to regularly review its risk control measures to ensure that its balance sheet continues to be protected. Such measures include requiring counterparties to submit adequate collateral, pricing the submitted collateral on a daily basis and applying appropriate collateral valuation haircuts and mark-downs.[4]

## Developments on the liability side of the Eurosystem balance sheet

**On the liability side, monetary policy tools and autonomous factors are the two main items**. Monetary policy tools include the current accounts, the deposit facility and other liquidity-absorbing tools. The deposit facility increased substantially after the launch of the two three-year LTROs. The increase was driven by funding needs and precautionary liquidity demand by counterparties. After the ECB lowered the deposit facility rate to zero in July 2012, counterparties' liquidity holdings shifted in part from the deposit facility to the current accounts, because the remuneration of the deposit facility was identical to the remuneration of current account holdings over and above the minimum reserve requirements. As regards other liquidity-absorbing tools, the liquidity provided through the Securities Markets Programme (SMP) was fully sterilised through weekly liquidity-absorbing operations until June 2014, to leave central bank liquidity conditions unaffected by the SMP. The Eurosystem has foreign liabilities, as the US-dollar liquidity-providing operations have been implemented through swap arrangements with the US Federal Reserve System.

**Chart B A breakdown of the simplified Eurosystem balance sheet: liabilities**

(EUR billions)




Source: ECB.

3 Detailed information can be found, for example, in the article entitled "The Eurosystem collateral framework throughout the crisis", *Monthly Bulletin*, ECB, July 2013.

4 See the Guideline of the ECB of 19 December 2014 on the implementation of the Eurosystem monetary policy framework (recast) (ECB/2014/60).

Turning to the autonomous factors, this item includes banknotes in circulation, government deposits and residual items over which central banks have little or no control. Government deposits have decreased recently since the negative deposit facility interest rate was introduced in June 2014, and this rate has also been applied to government deposits held with the Eurosystem that exceed a certain threshold.[5]

5 See the Guideline of the ECB of 5 June 2014 amending Guideline ECB/2014/9 on domestic asset and liability management operations by the national central banks (ECB/2014/22).

**Against a backdrop of subdued inflation and weak money and credit growth, in 2014 the ECB introduced additional credit easing policies in order to improve transmission.** The muted recovery that had begun in 2013 did not accelerate as initially expected. Monetary growth remained subdued and credit continued to contract, although the pace gradually slowed. Against this background, in June and September 2014 the ECB announced the launch of the TLTROs and purchases of ABS and covered bonds, while it also reduced the key policy interest rates to their lower bound. This package of measures was aimed at enhancing the transmission of monetary policy as well as providing further monetary accommodation. In particular, by bringing the average borrowing costs for households and firms down to levels that were more consistent with the intended policy stance, the measures aimed to support lending to the real economy.

**TLTROs were conducted to support bank lending to the non-financial private sector** (excluding loans to households for house purchase).[23] The TLTROs provided long-term funding at attractive terms and conditions for up to four years at the time of the launch of the operations for all banks that met certain benchmarks applicable to their lending to the real economy. The choice of this measure reflected the predominantly bank-based financing structure of the euro area economy and the significance of weak bank lending as a factor hampering the recovery. By providing incentives for banks to lend to the real economy, the TLTROs were aimed at enhancing monetary policy transmission. Improved funding conditions for banks should contribute to easing credit conditions and stimulating credit creation.[24]

**Purchases under the third purchase programme for covered bonds (CBPP3) and the ABS purchase programme (ABSPP) began in October and November 2014 respectively.** They further enhanced the functioning of the monetary policy transmission mechanism and supported the provision of credit to the real economy. The purchases in the ABS and covered bond markets reflect the role of these instruments in facilitating new credit flows to the economy. In particular, there is a close link between the interest rate spreads at which ABS and covered bonds are traded and the lending rates which banks apply to the underlying loans. Purchases should therefore contribute to lower interest rates on the targeted securities (through the price effect) which should be passed on to the rates on the underlying loans to the private sector (via the pass-through effect), improving lending conditions and creating room for banks to extend more credit.

**These credit easing measures were supplemented by a quantitative balance sheet orientation, marking a major change in the ECB's monetary policy communication.** Adding an indication in the ECB's communication of the quantity of purchases was deemed essential in view of the further worsening of the inflation outlook that had taken place. Uncertainty about asset purchases as an instrument to enhance the accommodative monetary policy stance is inherently higher

23 See the press release on measures to enhance the monetary policy transmission mechanism published by the ECB on 5 June 2014.
24 The spread on the main refinancing operations, initially set at 10 basis points, was reduced to zero in January 2015 for the six TLTRO operations that then remained.

compared with uncertainty about changes in interest rates. The purchase programmes for ABS and covered bonds have a high potential pass-through per unit of purchase, given that both markets were impaired, but the precise effects are difficult to anticipate. These purchases will lower funding costs for banks, which should be passed on to households and non-financial corporations seeking bank financing, and will also generate broader macroeconomic spillovers if the liquidity injection is sizeable. By adding a quantitative dimension to its communication, the ECB signalled that a significant purchase volume was essential to arrive at a meaningful macroeconomic effect.

**Following a further deterioration in the inflation outlook, and credit easing measures failing to deliver the necessary degree of accommodation, in January 2015 the ECB decided to purchase public sector securities.** This programme focuses on secondary market purchases of investment-grade debt instruments issued by euro area governments and agencies or international and supranational institutions. Together with CBPP3 and the ABSPP, the public sector purchase programme (PSPP) constitutes the expanded asset purchase programme. Purchases under the expanded asset purchase programme started in March 2015 and amount to €60 billion per month.[25] They are intended to be carried out until the end of September 2016 and will, in any case, be conducted until a sustained adjustment is seen in the path of inflation consistent with the aim of achieving inflation rates below, but close to, 2% over the medium term. In May 2015 purchases of public sector securities stood below 2% of euro area total outstanding government debt.

**The unconventional measures taken since June 2014, including both credit easing and large-scale asset purchases to further ease the monetary policy stance when policy rates are constrained by the lower bound, complete the shift from a passive to an active balance sheet policy**. Purchases of public sector securities will mainly rely on the portfolio rebalancing effect and on the signalling effect. Both effects have a size dimension, while successful signalling through the balance sheet also involves a time dimension. The significant size of the monthly purchases, combined with an intended end-point that could be extended if the sustainable achievement of price stability calls for it, should ensure a significant contribution of the monetary impulse, as will be reflected in the increase in the Eurosystem balance sheet.

**The ultimate indicator of the success of the recent programmes and operations is whether they achieve inflation rates below, but close to, 2% over the medium term.** While it is too early to assess their full contribution to that goal, given time lags in the transmission of the monetary accommodation, a number of early indicators of financing conditions and confidence have produced positive signals. Broad financial conditions had already started to improve well before the expanded asset purchase programme was announced, as market participants had anticipated the measure, following announcements by the Governing Council that it stood ready to take additional measures if required. Euro area bond yields have declined since December 2014 across all instruments, maturities and issuers and, in many cases, have reached new historical lows. Given a slight upward tendency in medium-term inflation expectations, real interest rates have decreased further. Spreads on investment-grade corporate bonds have continued their decline and stock prices have increased significantly. Reflecting in part the further decoupling of euro area and US government bond yields, the euro exchange rate has weakened significantly.

**The favourable developments in financial markets have started to spill over to the real economy**. Lower bank funding costs are being gradually passed on to the cost of external finance

25 For more details, see the box entitled "The Governing Council's expanded asset purchase programme", *Economic Bulletin*, ECB, January 2015.

for the non-financial private sector, aided by the comprehensive assessment of the balance sheets of the main euro area banks conducted in 2014 in preparation for the Single Supervisory Mechanism. Yields on unsecured bank bonds declined to historical lows in the fourth quarter of 2014. This was accompanied by a substantial fall in composite bank lending rates for households and non-financial corporations. The nominal cost of non-bank external finance for euro area non-financial corporations continued to decrease in the fourth quarter of 2014 and in the first few months of 2015, as a result of a further decline in the cost of both market-based debt and equity.

## 4 CONCLUSIONS

**In recent years the central bank balance sheet – its size and composition – has emerged as a flexible instrument of monetary policy**. Since the start of the global financial crisis monetary authorities have increasingly moved beyond their traditional operating procedures to make ever more intensive use of the central bank balance sheet as a tool of policy. For many jurisdictions, the use of the central bank balance sheet over time has marked a transition from reactive, or passive, on-demand liquidity provision with limited scope to affect broad financial conditions, to active, or controlled deployment in an effort to affect broad financial conditions. Thus, in addition to monetary authorities' traditional role as the ultimate provider of funding reassurance in response to financial stress, the central bank balance sheet has also been used to address impairments in the transmission of monetary policy, as well as to provide policy accommodation when short-term nominal interest rates are at their effective lower bound. In short, the central bank balance sheet has proven a flexible tool to address a variety of policy needs.

**However, given that the central bank balance sheet is a very flexible policy instrument, there is an important caveat**: a unit of liquidity may have very different effects in a given jurisdiction over time, as well as across jurisdictions at a specific point in time. In a given economy, the monetary authority may use the balance sheet to achieve different effects over time, depending on the circumstances, as indeed has been the case in recent years. Moreover, differences in economic and financial structures, as well as operating procedures, will necessitate different types of intervention across economies in terms of the size and composition of the balance sheet. These considerations caution against overly simplistic comparisons of central bank balance sheets.

**In recent years the ECB has used the Eurosystem balance sheet extensively in pursuit of its price stability mandate**. The use of the Eurosystem balance sheet has followed a similar trajectory to that seen in other jurisdictions. The increased liquidity provision in the initial stages of the financial crisis (through an increase in the allotment in refinancing operations) was followed by term lending and funding reassurance (through longer-term refinancing operations carried out as fixed rate full allotment tender procedures), which were, in turn, followed by measures to strengthen transmission (the SMP, TLTROs, CBPP1 and CBPP2). The ECB has recently launched a further purchase programme for covered bonds and new programmes for ABS and public sector securities. These programmes are designed to strengthen the pass-through to the real economy and provide a further broad easing of the monetary policy stance with short-term nominal interest rates at their effective lower bound.

**Outright asset purchases signal the determination of the ECB to achieve its primary objective**, enhancing signalling effects and resulting in portfolio rebalancing effects that spread to assets across the board. This should contribute to improving lending and economic growth and, ultimately, to bringing about a sustained adjustment in the path of inflation consistent with the aim of achieving inflation rates below, but close to, 2% over the medium term.

# IMF SURVEILLANCE OF THE EURO AREA AND ITS MEMBER COUNTRIES

*IMF surveillance encompasses the monitoring of the economic and financial policies of its member countries and the global economy as well as the identification of possible risks to stability and the provision of advice on necessary policy adjustments. In recent years, the Fund has significantly improved its surveillance in general, including of the euro area and its constituent countries. It has responded to the shortcomings exposed by the crisis in global financial markets and in some euro area countries with several new initiatives and the strengthening of practices in key areas. These changes are the result of critical reflection exercises by the IMF, of which the 2011 review of IMF surveillance was arguably the most pivotal. At the same time, there is still scope for further enhancing IMF surveillance and for introducing additional changes to make it more effective and better tailored to the circumstances of the relevant economies, not least in view of the recent significant adjustments to the policy framework within the EU/euro area itself.*

*The aim of this article is to take stock of IMF surveillance of the euro area and its member countries following recent changes. In so doing, it also explores the interplay between the EU and IMF surveillance frameworks for the euro area. Since the focus is on the IMF's regular surveillance activities, it does not cover surveillance in the context of lending programmes.*

## 1 INTRODUCTION

**The IMF has taken a number of steps in recent years to strengthen its surveillance framework and toolkit.** Its own triennial surveillance reviews (TSR) have been instrumental in that process. The 2011 TSR, as the first comprehensive review after the start of the global financial crisis, was particularly important.[1] It identified key priorities, which IMF staff have since sought to operationalise. These concerned (i) interconnectedness; (ii) risk assessment; (iii) financial stability; (iv) external stability; and (v) traction. In addition, the legal basis for surveillance was updated in 2012 with the adoption of the Integrated Surveillance Decision (ISD), which enables the IMF to assess all policies that are relevant for a member's external and domestic stability and to take into account inward and outward spillovers and cross-country policy interactions. The adoption of a Financial Surveillance Strategy was also an important step towards improving risk identification and policy analysis in the financial sector and fostering an integrated view of financial sector risks in products and instruments.

**In 2014 the IMF conducted its latest TSR[2], which was structured around three themes: (i) integrating and deepening risk and spillover analysis; (ii) more tailored and expert policy advice; and (iii) achieving a greater impact.** Regarding the first theme, the review found that there was still significant scope to explore synergies between bilateral and multilateral surveillance. Moreover, IMF staff saw a need to deepen the understanding of how risks map across countries and how spillovers spread across sectors. As to the second theme, attention was drawn to the importance of tailoring advice to country circumstances. Also, to enhance policy advice, Fund staff saw merit in continuing to build on the IMF's understanding of macroprudential policy and highlighting the implications of macro-critical structural reforms in line with its mandate. Turning to the third theme, staff underlined the need for more client-focused and candid communication.

1 The findings of the report by the IMF's Independent Evaluation Office entitled "IMF Performance in the Run-Up to the Global Economic and Financial Crisis" (2011) are also reflected in the 2011 TSR.
2 International Monetary Fund (IMF), "2014 Triennial Surveillance Review: Overview Paper", IMF, Washington, D.C.

**Drawing on a recent report by the Task Force on IMF Issues of the International Relations Committee of the European System of Central Banks[3], this article looks into how IMF surveillance of the euro area and its constituent countries has changed since the pivotal 2011 TSR.** Section 2 describes the IMF framework for surveying the euro area and its members and discusses how it interacts with the EU/euro area's own surveillance framework, which has also been substantially reformed in the recent past. Section 3 reviews the performance of the Fund's post-crisis surveillance of the euro area and its member countries in the priority areas mentioned above. It also covers the implications of European banking union for IMF surveillance. Section 4 looks at the specificities of IMF surveillance of the policy framework of EMU, and Section 5 concludes.

## 2 THE FRAMEWORK OF IMF SURVEILLANCE OF THE EURO AREA AND ITS MEMBER COUNTRIES

### 2.1 A NEW LEGAL FRAMEWORK

**A new legal framework for IMF surveillance was put in place with the adoption of the Integrated Surveillance Decision in 2012.** The legal basis for Fund surveillance is set out in Article IV of the IMF's Articles of Agreement, which distinguishes between bilateral and multilateral surveillance.[4] The ISD updated the surveillance framework by enabling the IMF to engage more effectively with members on their domestic economic and financial policies and by making Article IV bilateral consultations a vehicle for multilateral surveillance as well. In particular, the ISD allows the IMF to discuss with its members the full range of spillovers from their policies when these may have a significant impact on global stability.

**While the ISD also provides the basis for better surveillance of monetary unions, the paragraph in the ISD concerning currency unions changed little compared with the 2007 Decision on the Bilateral Surveillance over Members' Policies.** The text has been improved by placing emphasis on ensuring not only the balance of payments stability of the union, but also its domestic stability. Helpfully, the ISD has been translated into operational guidance on the surveillance of currency unions in which staff are explicitly advised to assess the extent to which economic and financial polices at the level of the currency union (exchange rate, monetary, fiscal and financial sector policies) are promoting the union's domestic and balance of payments stability and global stability. Despite the fact that EU/EMU decision-making structures have been strengthened, the legal basis remains constrained by the country-based membership of the IMF. The ISD repeats the 2007 Decision in explicitly noting that members of currency unions "remain subject to all of their obligations under Article IV section 1, and accordingly, each member is accountable for those policies that are conducted by union level institutions on its behalf" (ISD, paragraph 8). This corresponds to the fact that countries themselves retain all the resulting rights and obligations of IMF membership, even though the institutional and governance set up is different for euro area countries in that there is an independent central bank and joint decision-making in some policy areas. None of the European institutions or fora are members of the IMF, and their cooperation with the Fund is not mandatory. The European Central Bank was granted observer status under IMF

3 Task Force on IMF Issues of the International Relations Committee of the European System of Central Banks, "IMF Surveillance in Europe", *Occasional Paper Series*, No 158, ECB, Frankfurt am Main, January 2015.

4 Article IV, Section 1 provides that each member shall "undertake to collaborate with the Fund and other members to assure orderly exchange arrangements and to promote a stable system of exchange rates". The Fund is directed to oversee the compliance of each member with its obligations, and give heightened scrutiny to members' exchange rate policies. Section 3(a) requires the Fund to "oversee the international monetary system in order to ensure its effective operation" and forms the basis for the Fund's multilateral surveillance.

Decision No 11875-99/1 of 21 December 1998 and is accordingly permitted to participate in IMF Executive Board meetings on specified topics and topics relevant to the mandate of the ECB.[5]

## 2.2 SURVEILLANCE IN PRACTICE: BILATERAL, REGIONAL AND MULTILATERAL

**The IMF conducts consultations with individual euro area countries (resulting in country reports covering national policies), as well as with the authorities representing the euro area as a whole (resulting in a report on euro area policies).** It also conducts a Financial Sector Assessment Programme (FSAP) every five years for those euro area members with systemic financial systems[6], and on request for the other euro area countries. In addition, the first FSAP for the European Union was concluded in March 2013.

**The modalities for conducting IMF surveillance within the euro area were formalised with the introduction of the euro.**[7] For individual euro area countries, there were no changes to the annual consultation under Article IV of the Articles of Agreement. As it is not a member of the IMF, the euro area as a whole does not have an Article IV consultation in its own right. Instead, IMF staff semi-annually exchange views with staff of the ECB, the European Commission and other European institutions and bodies and draw up an annual report on euro area policies to complement and better inform the Article IV consultations with individual euro area countries (not the other way round). Thus, in practice, euro area surveillance follows a dual track, with a separate surveillance exercise for the union, coordinated with national Article IV surveillance. This results in consultations with the 19 individual euro area members plus a consultation on the policies of the ECB and the European Commission, leading to 20 annual reports in total. In addition, as part of its multilateral surveillance, the IMF analyses developments in the euro area in its World Economic Outlook (WEO), Global Financial Stability Report (GFSR) and Fiscal Monitor. The Fund has also produced annual Spillover Reports and External Sector Reports since 2011 and 2012 respectively, which include a focus on the euro area as well as key euro area countries.

## 2.3 THE EU/EURO AREA AND IMF SURVEILLANCE FRAMEWORKS: POTENTIAL SCOPE FOR TENSIONS AND CROSS-FERTILISATION

**The recent crisis has also led to successive reforms of the surveillance framework of the EU and the euro area.** New surveillance systems for EU Member States' budgetary and economic policies, as well as a new financial supervisory architecture mainly affecting euro area countries, have been put in place.[8] A clear calendar has been established in the context of the European Semester, during which policy recommendations are formulated at the European level and addressed to the national level.

**The reinforced EU surveillance framework has thus far not led to any specific changes in the way the IMF conducts its surveillance of EU Member States/euro area countries, although such an avenue could be considered.** On the one hand, the interplay between the reinforced EU surveillance frameworks and those of the IMF might entail specific challenges for both EU Member States/euro area countries and the IMF going forward. Firstly, with economic governance

5 While the ECB holds observer status at meetings of the IMF Executive Board, both the ECB and the European Commission hold observer status on the International Monetary and Financial Committee.
6 Austria, Belgium, Finland, France, Germany, Italy, Ireland, Luxembourg, the Netherlands and Spain.
7 IMF Decision No 12846-(98/125) and IMF Decision No 12899-(02/119), as amended by IMF Decision No 14062-(08/15).
8 See, for example, the article entitled "A fiscal compact for a stronger Economic and Monetary Union", *Monthly Bulletin*, ECB, May 2012, and the box entitled "The 'two-pack' regulations to strengthen economic governance in the euro area", *Monthly Bulletin*, ECB, April 2013. With regard to banking union, see the *Financial Stability Review*, ECB, May 2014.

increasingly exercised at different levels (national, joint national, euro area and EU), the way in which policy formulation is being shaped for euro area countries has changed. This requires the IMF to internalise these new EU/euro area processes properly in its surveillance, and may complicate its surveillance or even pose challenges to the consistency between assessments made in national and euro area surveillance reports. Secondly, there are differences in the scope, focus, enforcement mechanisms and traction of the two surveillance frameworks. Although IMF country surveillance is constantly ongoing, the key focal point is the annual Article IV report – a once-yearly exercise of a cooperative nature – and the Fund's leverage is based on the strength of its arguments, peer pressure and, on occasion, its potential impact on financial markets. By comparison, EU surveillance is a continuous process with regular formal meetings, embedded in the European Semester, including monitoring of implementation in the second semester of the year and with legally binding procedures for dealing with fiscal and macroeconomic imbalances. In addition, its coverage extends further into the structural policy domain.

**IMF surveillance usually results in broader, more strategic policy guidance, in contrast with the more detailed country-specific recommendations which the EU makes under its surveillance calendar.** Complications may arise if, owing to differences in views on the effectiveness of certain policy tools in given circumstances, contrasting policy recommendations are made. Furthermore, IMF policy advice may not always be strictly in line with prevailing EU rules if these rules are deemed wanting by IMF staff, yet individual EU Member States/euro area countries may legally not be in a position to disregard those rules and follow the IMF's advice. On the other hand, the IMF and EU surveillance frameworks can also complement each other. In fact, the IMF can play a helpful role as an independent, trusted external adviser. The Fund has a breadth of expertise, a wealth of experience across countries and over time, and an approach that is driven first and foremost by economic analysis, with fewer institutional constraints. As such, it has an important role to play in providing an external perspective in addition to the European view from within. IMF recommendations can provide an impetus for euro area countries to collectively deliberate and seek, if warranted, a change in national or common policies.

## 3 IMPLEMENTATION OF THE IMF SURVEILLANCE FRAMEWORK

**Overall, the IMF has made good progress in implementing the new surveillance framework both in general and in the euro area, although there is scope for further improvement.** Reviewing the Article IV reports drawn up on euro area countries in 2013 and 2014, this section looks at whether the IMF has effectively implemented changes to its surveillance framework in four of the five priority areas identified in the 2011 TSR for the euro area: (i) interconnectedness, (ii) risk assessment, (iii) financial stability and (iv) traction. Moreover, it covers the implications of European banking union for IMF surveillance of the euro area and its constituent countries.

### 3.1 INTERCONNECTEDNESS

#### 3.1.1 ECONOMIC AND FINANCIAL LINKAGES

**For individual euro area countries, national surveillance is now far better informed by regional surveillance.** Analyses in national Article IV and Financial System Stability Assessment (FSSA) reports are systematically informed by, and put into the context of, the main economic and financial developments within the euro area as a whole.

**In multilateral reports such as the WEO and the GFSR, thematic chapters or sections usually provide in-depth analysis of specific issues such as the banking, corporate and sovereign nexus.** However, in past reports, the identification of key vulnerabilities and challenges for the euro area focused mainly on a narrow selection of countries, with the discussion of developments confined to the interaction between "core" and "stressed" countries.

**It may also be worth considering whether to strengthen the analysis of spillovers to better understand the impact of shocks and policy decisions, building on country reports.** This may mean going further than the current general summing up of spillovers within the euro area and better integrating the analysis carried out in the context of country surveillance into monetary union surveillance products. Building on the example of recent Spillover Reports, the provision of more in-depth analysis of positive inward spillovers, in addition to the negative shocks most commonly examined in country reports, could be considered.

### 3.1.2 POLICY LINKAGES

**Improvements have been made in the treatment of policy interconnectedness within the euro area.** For example, policy advice to countries appears to be more intrinsically linked to the main economic and financial developments in the euro area and is more cognisant of the euro area economic and financial policy framework. Staff now clearly distinguish between policies within the field of competence of European authorities (e.g. monetary policy), those under the responsibility of national governments (e.g. structural reforms to boost competitiveness) and those within a given EU framework (e.g. the Stability and Growth Pact (SGP)). Similarly, policy advice on financial issues now takes into account developments in the EU/euro area and at the national level in the context of a profound reshaping of the European supervisory architecture.

**Mapping the main policy linkages between euro area countries is indeed important.** This can take the form of holding more in-depth discussions with authorities on how euro area membership affects vulnerabilities and policy options, including, e.g., the case of euro area monetary policy coping with different national macroeconomic conditions and the role of national macro prudential policies within the euro area. Moreover, findings under the EU Macroeconomic Imbalances Procedure could be juxtaposed with the IMF's own assessment of extra- and intra-euro area imbalances. In addition, authorities could be provided with better "maps" of financial and real linkages within the euro area. Without prejudice to the domestic stability objective, the policy options suggested to authorities could be accompanied by information on the outward spillovers they potentially generate.

**There may be merit in providing stronger and more clearly formulated policy recommendations on structural reforms that are macro-critical, consistent with the Fund's mandate in this policy area, including their estimated impact.** Discussions on these issues should be more systematic when they are of critical importance for the external balance of a country, which more often tends to be the case for countries participating in a monetary union. These policy recommendations could also build on cross-country analysis. The Fund could make better use of insights from other organisations, especially the Organisation for Economic Co-operation and Development. Furthermore, it could try to quantify the effects of structural reforms in terms of their impact on economic growth and, to the extent possible, both the euro area's external and internal balances, while recognising the difficulties of such an exercise (including, not least, data, technical and resource constraints). This would follow up on the work that the IMF has already started in the context of the G20 Growth Strategies.

### 3.2 RISK ASSESSMENT

**Post-crisis surveillance in the euro area has stepped up risk discussions, with risks to the baseline scenario discussed for all member countries and risk assessment matrices included in most of the reports.** By highlighting transmission channels and assigning probabilities to the crystallisation of risks as well as their potential impacts, the surveillance reports have provided for a sharper focus. Moreover, policy implications and responses are also covered in the bulk of cases.

**Useful risk assessments sufficiently stress the limitations/caveats of the analysis (in terms of methodology and underlying data constraints) and take into account any unintended market consequences that their communication may entail, especially if these are likely to make headline news**. With this in mind, while there could be merit in the Fund trying to identify all pertinent risks early on, due care would need to be taken to avoid communication pro-cyclically reinforcing trends in countries that may already be facing difficulties. There could also be room for a more structural role by improving communication on medium-term risk scenarios.

### 3.3 FINANCIAL STABILITY

**The widespread coverage of financial stability issues in the reports for euro area countries shows that the IMF is making progress in addressing previous weaknesses in this area.** Risks to the financial system and underlying vulnerabilities are considered in all Article IV reports on euro area countries, with most of them also covering macro-financial and cross-border linkages. The analysis and discussion of linkages vary across reports, however, and there is room for further elaboration and improvements regarding linkages. In terms of financial stability policies, measures were identified in each case and over half of the reports followed up on, or at least referred to, past FSAP recommendations. The first EU-wide FSAP was an important milestone. It focused on how the EU/EMU supranational institutions interact with national institutions and put forward "high-priority recommendations" on overcoming cross-border risks and improving the financial stability framework of the Single Market. The report also contained a section on lessons from national FSAPs, which offered an overview of the main risks and vulnerabilities identified in the national FSAPs of EU countries. Some of the recommendations, e.g. on banking union, have provided important input for actual policy shaping. However, policy recommendations could potentially be enhanced by more specific advice on issues relating to financial stability/sector matters, including, for example, cross-border cooperative arrangements or reductions of cross-border barriers. By way of positive example, in the 2013 EU FSAP, IMF staff consistently argued for a supranational approach to governance arrangements in order to counter national bias and prevent fragmentation in the EU. With the prospect of further work on a capital markets union in the EU, new opportunities open up for IMF policy recommendations in this field.

**The establishment of a banking union in Europe and the ensuing reshuffling of responsibilities in the areas of microprudential and macroprudential supervision are already starting to have implications for the way in which the IMF conducts its financial sector surveillance of EU Member States.** This applies to both Article IV consultations and FSAPs for euro area countries. If IMF surveillance and advice are to remain effective and relevant, they will have to fully reflect the new policy-making frameworks and respective competences at EU Member State, euro area and European Union levels. For Article IV surveillance of euro area countries, banking union means that the ECB must be consulted, given its new responsibilities in the areas of microprudential and macroprudential supervision. As far as FSAPs for euro area countries are concerned, close cooperation will be

needed between the IMF and national and euro area authorities on the assessments of supervision, risks and resolution. The assignment of new policy responsibilities may also necessitate revisiting the decision governing the observer status of the ECB in the IMF. Moreover, in line with the Fund's Integrated Surveillance Decision, due attention needs to be paid to closely linking assessments made in the course of bilateral/regional surveillance with those made in the context of multilateral surveillance.

### 3.4 TRACTION

**There is general agreement that, for IMF surveillance to be effective and relevant, the Fund has to ensure that it has adequate traction as a trusted advisor.** The Fund's 2012 staff guidance note for surveillance under Article IV consultations regards traction as having two dimensions: firstly, the extent to which authorities engage with the Fund on its analysis and recommendations, and secondly, the extent to which Fund advice is reflected in policy action. However, traction also has to be assessed in the light of the Fund's role as one adviser among others; that is, authorities are not obliged to translate IMF advice into policy action. Thus, traction depends on high-quality analysis, even-handedness, candour and effective communication.

**The Fund has recently taken several steps to improve the traction of its advice within the euro area.** This is a particularly onerous task owing not least to the challenges posed by the architecture of the monetary union. With regard to national and supranational authorities, it has focused more on issues of core interest to authorities and following up on its previous advice. For example, macro-social issues have been discussed to some degree in nearly all of the reports for the euro area and its individual countries, with considerable emphasis placed on labour market developments and reforms, given their macro-critical role. In many cases, Fund staff have looked at the previous policy advice they have issued, but this exercise has normally focused on national authorities' response to that advice and has not assessed the quality and relevance of the IMF's own analysis and recommendations. An innovation worth noting is the "Point and Counterpoint to the Staff's Views" sections included in a few selected reports. In these sections, Fund staff put forward and respond to a series of possible counter-arguments to their own diagnosis and recommendations. This innovation could usefully be extended to all Article IV reports on euro area countries. Building on this, it might also be insightful to include a box on the quality of past IMF advice (including a review of whether and how the Fund has modified its own past advice) and the authorities' response to it. By following up on recommendations in subsequent reports, and thus providing continuity and ensuring consistency of messages, traction can be further improved.

**Increasing the responsiveness of authorities to IMF advice may also be a matter of appropriate timing.** For the euro area, there could be merit in better synchronising the issuance of Fund policy recommendations with the EU/euro area policy-making cycle, which would allow such recommendations to feed more effectively into EU/euro area decision-making processes. More use could then be made of IMF surveillance reports on individual EU Member States in the context of country surveillance processes conducted at the European level.

## 4 IMF SURVEILLANCE OF THE POLICY FRAMEWORK OF EMU

**Over recent years, IMF surveillance of the euro area policy framework has improved.** The 2011 report on euro area policies set a good example by exploring the aspects of the framework that had led to the euro area sovereign debt crisis. More recent reports usefully made connections

between different elements of the framework (e.g. the 2012 report on euro area policies linked banking union with fiscal integration and fiscal consolidation under the SGP). The 2013 report on euro area policies drew attention to potential risks (likelihood and expected impact) and recommended changes to some aspects of the framework in an innovative, clear and helpful "risk assessment matrix". The reports also usefully distinguished between the relative progress in different areas of the framework of the EU and the euro area.

**The stability and performance of the euro area and its members depend on good governance, and the IMF has made distinct efforts to examine this.** EU/euro area governance, i.e. the design and functioning of the EMU policy framework, is continuing its shift from national towards more joint or centralised policy-making. The IMF usefully dealt with governance in 2011, for example, when IMF staff reports weighed in on discussions on strengthening the EU's fiscal policy framework, including a critical analysis of the effectiveness of the SGP and its surveillance, decision-making, and enforcement mechanisms (such as the problem with qualified majority voting in the Council). This type of advice is helpful and could be further improved, for example, by delving deeper into some aspects, such as internal euro area surveillance, building on material IMF staff have developed on fiscal union and banking union, for instance; by following up on recommendations in subsequent reports to provide continuity and consistency in IMF messages; and by taking due account of the policy framework for reforms, including views on the appropriate balance of competences at the European and national levels.

**The current format of euro area consultations produces dual-track surveillance – of supranational policies and national policies – with separate interlocutors and no single comprehensive report on the euro area.**[9] Multiparty engagement with policy authorities is an essential element of euro area surveillance. To this end, it has become standard procedure in reviewing euro area policies for the IMF to interact with the Eurogroup Working Group and the Eurogroup. This occurs at the end of the consultation process and is consequently a presentation of results rather than a consultation contributing to the substance of the surveillance exercise. As with national surveillance, there could be merit in involving policy-makers at the level of the Eurogroup Working Group at an earlier stage in the consultation process, with a focus on the functioning of the euro area as a whole, which could help enhance traction.

## 5 CONCLUSIONS

**The IMF has significantly improved its surveillance of the euro area and its member countries along the lines suggested in the 2011 landmark triennial review of surveillance.** Overall, messages have become more consistent and focused across surveillance products. For euro area countries, there is now more integration between surveillance at the bilateral and euro area-wide level, while analyses at both levels draw on multilateral exercises such as the External Sector Reports and Spillover Reports. For all euro area countries, there is better integration between Article IV reports and national FSAPs. Moreover, risk assessment matrices showing risks, channels of transmission and policy options are now used in almost all euro area Article IV reports. Follow-up on past advice has improved thanks to dedicated boxes included since 2012 in most national Article IV reports. Lastly, the Fund has also been very active in making suggestions on the institutional

9 There are also mixed messages on who the IMF regards as "euro area authorities". The reports on euro area policies refer explicitly to "the authorities" as being the ECB and the European Commission, but a much wider group is also mentioned, including the European Banking Authority, the European Systemic Risk Board, the European Stability Mechanism and the European Council, the Eurogroup and the Eurogroup Working Group.

architecture of the EMU, advocating more financial and fiscal integration in each of the recent euro area reports and advising on the creation of a European banking union. Nonetheless, there remains room for improvement in the surveillance of the euro area and its individual countries. There is still some way to go in fully implementing the 2011 TSR recommendations and making IMF surveillance more effective and better tailored to the specific circumstances of the relevant economies, not least in view of the recent significant changes to the surveillance framework within the EU/euro area itself.

# FORECASTING THE PRICE OF OIL

*Oil price forecasts are a crucial input into macroeconomic projections, in particular owing to the impact that oil prices have on inflation and output and, hence, on monetary policy. Using futures to forecast oil prices provides a transparent and simple tool which is easy to communicate. However, futures are an imperfect reflection of market expectations and have contributed to large forecast errors in HICP inflation in the past. This article presents an approach for checking the risks surrounding futures-based forecasts against a model combination which produces lower forecast errors and is more robust to changes in oil price dynamics.*

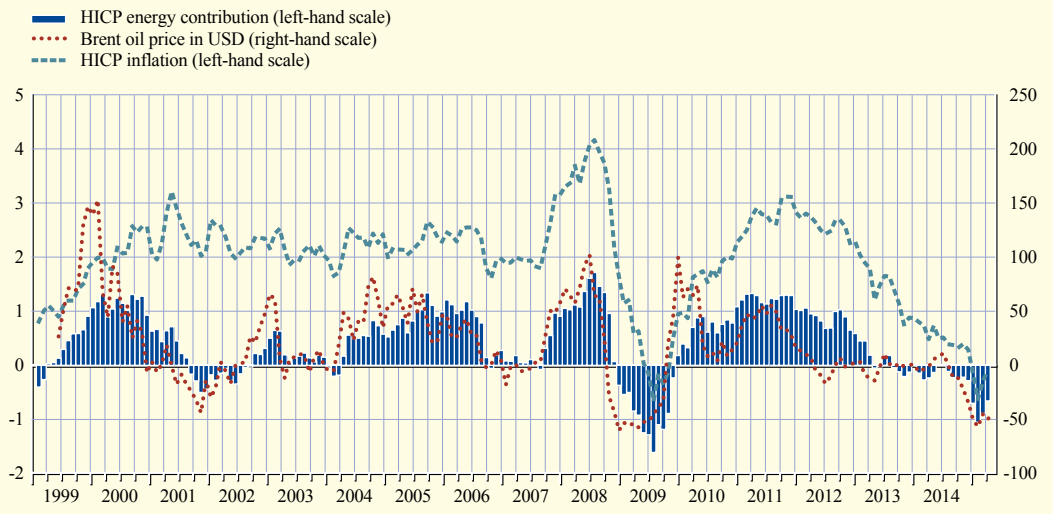
## 1 INTRODUCTION

**Future developments in oil prices tend to be an important conditioning factor in macroeconomic projections for output and inflation.** With regard to inflation, the path of oil prices determines both the direct impact via the prices of energy products which are directly consumed by households, such as transport fuels, and the indirect impact via the production costs for final goods and services. Historically, much of the volatility in euro area HICP inflation has stemmed from changes in the energy component (see Chart 1). With regard to output, the impact of oil price developments essentially derives from the associated changes in real disposable income for households and companies and their knock-on effects for consumption and investment spending.

**Recent developments in oil prices have highlighted the difficulty in projecting such developments.** While oil prices were broadly stable from 2011 to mid-2014, they declined by more than 50% from end-June 2014 to mid-January 2015 owing to an oversupplied oil market, with robust increases in North American shale oil production and sluggish oil demand growth. Since then, oil prices have increased by around 40%, mostly on account of some indications of a possible slowdown in US oil supply and expectations of higher oil demand. However, the near-term outlook remains highly uncertain.

Chart 1 Euro area HICP inflation and Brent oil prices

(annual percentage change)




Sources: Eurostat and Bloomberg.

**The performance of projections in terms of accuracy or bias critically hinges on the ability to anticipate the future path of oil prices.** In the Eurosystem/ECB staff macroeconomic projections, as in those of many other central banks and international organisations, the prices in oil futures markets are used as technical assumptions to reflect expectations about future oil price developments.[1] However, large oil price forecast errors have been made using such futures-based assumptions. Reviews of the Eurosystem/ECB staff projections have shown that the projection bias for the HICP in the period since 1999 would have been significantly reduced if oil price movements had been better anticipated. Indeed, a large part of the underestimation of euro area HICP inflation in this period stemmed from this source.

Against this background, this article discusses the general difficulties in forecasting oil prices (Section 2), elaborates on the forecast properties of oil futures (Section 3), provides an overview of alternative forecasting methods (Section 4), and introduces a newly developed forecast combination method for Brent oil prices (Section 5).

## 2 THE DIFFICULTY IN FORECASTING OIL PRICES

**Although oil prices are predictable to some extent, accurately forecasting them is a challenging task.** Oil prices are predictable as oil is a physical commodity, the price of which is largely determined by oil fundamentals and in particular by global economic activity. Nevertheless, finding an accurate tool for oil price forecasting is complicated by the fact that oil market dynamics tend to vary substantially over time. This section discusses the determinants of oil price movements and explains the challenges that time variation in oil price behaviour poses for oil price forecasting.

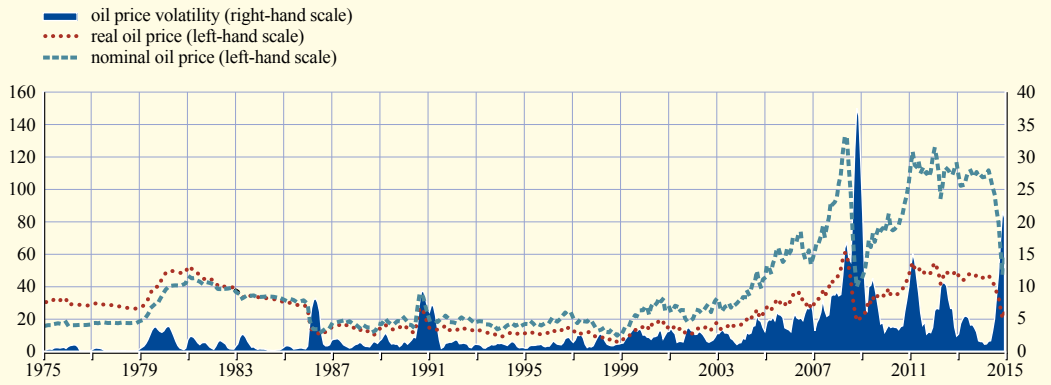
**Depending on the driving factor, oil prices can behave very differently over time.** Oil prices have evolved in very different ways over time, varying between being stable, trending upwards and falling abruptly (see Chart 2). Major movements in oil prices can largely be explained by changes in oil supply, oil demand and oil inventories. Taking a historical perspective, the major oil shocks of the 1970s and 1980s were caused by severe disruptions on the supply side.[2] Having been broadly stable for most of the 1990s, oil prices increased strongly from 2003 onwards owing to strong growth in global economic activity driven by emerging market economies, and in particular China. This demand-driven rise in oil prices was only interrupted in 2008 by the global financial crisis, which caused oil prices to drop by about 70% over a few months as a result of falling global economic activity that triggered a sharp slowdown in oil demand growth in advanced economies in particular. Following a rapid recovery from 2009 onwards, oil prices were broadly stable for about four years owing to slowing oil demand growth and the rise in shale oil production in North America, which were broadly offset by supply-side concerns related to geopolitical tensions in the Middle East and, to some extent, Russia. At the same time, continued gains in energy efficiency and increased substitution with other energy sources contributed to restraining oil demand growth. More recently, oil prices fell steeply as robust increases in North American shale oil production together with sluggish oil demand growth, particularly in China, caused the oil market to be oversupplied. Markets reassessed their outlook for the oil market in the light of receding geopolitical risks, as heightened geopolitical uncertainty in major oil-producing countries did not affect global oil supply.

1 Brent crude oil prices are used as they are the leading global price benchmark for sweet light crude oil (given that Brent prices are used for the majority of internationally traded crude oil). In addition, Brent crude oil is mostly destined for European markets and therefore captures well the oil price dynamics relevant for the euro area, while West Texas Intermediate (WTI) better reflects the US market.

2 See, for example, Hamilton, J.D., "Causes and Consequences of the Oil Shock of 2007-08", *Brookings Papers on Economic Activity*, Vol. 40 (1), 2009, pp. 215-283.

**Chart 2 Historical evolution of nominal and real Brent crude oil prices**

(in USD per barrel; US CPI index as deflator, 1982-84=100 (left-hand side), one standard deviation (right-hand side))




Sources: Energy Information Administration and Federal Reserve Economic Data.
Notes: Monthly data; the Brent oil price in USD per barrel has been backcasted with the growth rate of the refiner's acquisition cost of imported crude oil up to May 1987 and deflated using the US Consumer Price Index. Oil price volatility is measured as the six-month rolling standard deviation of the nominal oil price.

Despite the oversupplied oil market, OPEC decided not to lower oil production at its meeting in November 2014. Historically, Saudi Arabia has tended to behave as the "swing producer" in the oil market, stabilising oil prices by reducing its output when oil prices decline and increasing it when prices go up.[3] Its changed strategy in November exacerbated the oil price drop, as its decision not to react was interpreted as a move to maintain market share given the rise in North American shale oil. In sum, it is clear that the dynamics in the oil market can differ substantially depending on the driving factor of oil price movements. In addition to movements in oil supply and demand, the level of oil inventories and changes in that level also crucially determine oil price dynamics.

**In addition, oil price volatility seems to have increased over time** (see Chart 2). There is empirical evidence that variations in the price elasticities of oil demand and supply create periods of elevated oil price volatility.[4] Other studies relate part of this higher oil price volatility to the increased use of oil as a financial asset. The active management of oil price assets in futures markets since the early 2000s, also referred to as the "financialisation" of the oil market, might have caused oil prices to react more quickly to macroeconomic news that is reflected in the prices of assets such as stocks and in exchange rates.[5]

**Changing oil market dynamics and increased oil price volatility have several implications for oil price forecasting.** First, as oil is a physical commodity of which the price is largely determined by economic fundamentals, including data on these economic determinants helps in forecasting oil prices more accurately. Data limitations, with respect to fluctuations in global oil inventories, for example, nevertheless make it more difficult to accurately capture movements in oil fundamentals.[6] In addition, as oil is also increasingly used as a financial asset, spot oil prices tend

3 However, in a few instances such as in 1986, Saudi Arabia decided not to lower oil production as this strategy was deemed to be counterproductive in an environment of sluggish demand growth, weak cartel discipline and strong non-OPEC production growth.
4 See, for example, Baumeister, C. and Peersman, G., "The role of time-varying price elasticities in accounting for volatility changes in the crude oil market", *Journal of Applied Econometrics*, Vol. 28(7), 2013, pp. 1087-1109.
5 See, for example, Fratzscher, M., Schneider, D. and Van Robays, I., "Oil prices, exchange rates and asset prices", *Working Paper Series*, No 1689, ECB, 2014.
6 In 2011 the G20 recognised the importance of transparency in the oil market for world economic growth and expressed support for the improvement of data availability on oil production, consumption, refining and stock levels in the context of the Joint Oil Data Initiative.

to reflect changes in the macroeconomic environment more rapidly. This might cause increased oil price volatility in the short run, making it more difficult to forecast oil prices over these horizons. Second, as oil market dynamics tend to change substantially over time (depending on the driving factor), there might be considerable instability in the performance of an individual forecast method that only captures a specific behaviour of oil prices. As a consequence, combining different forecasts that each capture a specific behaviour of oil prices might help in addressing time variation in the performance of individual forecast models caused by changing oil market dynamics. The next sections discuss the limitations of the futures-based oil price forecast and alternative approaches to oil price forecasting, while Section 5 describes a forecast combination approach for Brent oil prices in more detail.

## 3 FUTURES AS A REFLECTION OF EXPECTED OIL PRICE MOVEMENTS

**Oil price futures are frequently used as the baseline for oil price assumptions in economic projections.** They are used, for example, in the Eurosystem/ECB staff macroeconomic projections and in the projections of many other central banks and international institutions. The main reason for using futures as a baseline for oil price assumptions is that they provide a simple and transparent method which is easy to communicate.

**However, oil price assumptions based on futures yield large forecast errors.** Table 1 shows the mean absolute error (MAE) and the root mean squared error (RMSE) of the Eurosystem/ECB projection assumptions for nominal oil prices four and eight quarters ahead for the period 2005 to 2014. The MAE suggests that on average over this period, the projections four and eight quarters ahead deviated by about 17% and 20% respectively. The higher RMSE values show that the MAE masks important variations in the projection performance over time. These errors have a significant impact on inflation projections. While estimates of the impact of a 10% increase in oil prices on HICP inflation are surrounded by uncertainty, they tend to be in the range of 0.2-0.3 percentage point in the first year after the shock, and an additional 0.1-0.2 percentage point in the second year. This effect has been found to depend on the level of oil prices, with a stronger impact being measured when oil prices are at an elevated level.[7] In addition, futures had a negative forecast bias (see the third column of Table 1), indicating that oil prices tend to turn out higher on average than futures prices would suggest.

**The main reason for the large forecast errors of futures is that the futures curve is usually flat and downward sloping owing to the specific nature of oil as a physical and storable commodity.** As a result, the wedge between futures and spot prices, which defines the slope of the futures curve, increases with the risk-free rate[8], the risk premium and storage costs and decreases with the convenience yield. While the first two factors are present for any asset traded in the spot and

**Table 1 Average projection errors for oil prices**

(Q1 2005 to Q4 2014)

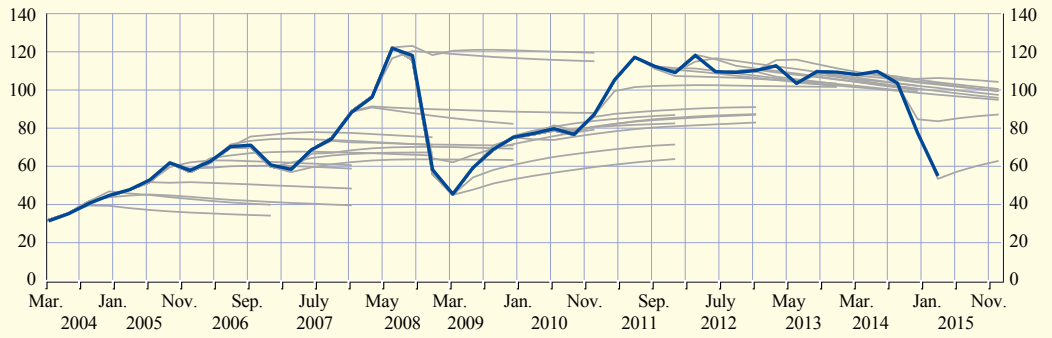
| | Mean absolute error | Root mean squared error | Bias |
|---|---|---|---|
| Four quarters ahead | 16.9 | 24.3 | -1.6 |
| Eight quarters ahead | 19.9 | 24.4 | -6.9 |

Source: ECB calculations.

7 See "Energy markets and the euro area macroeconomy", *Occasional Paper Series*, No 113, ECB, June 2010.
8 The risk-free rate is the opportunity cost of buying a specific asset.

**Chart 3 Brent crude oil prices and futures**

(USD per barrel)



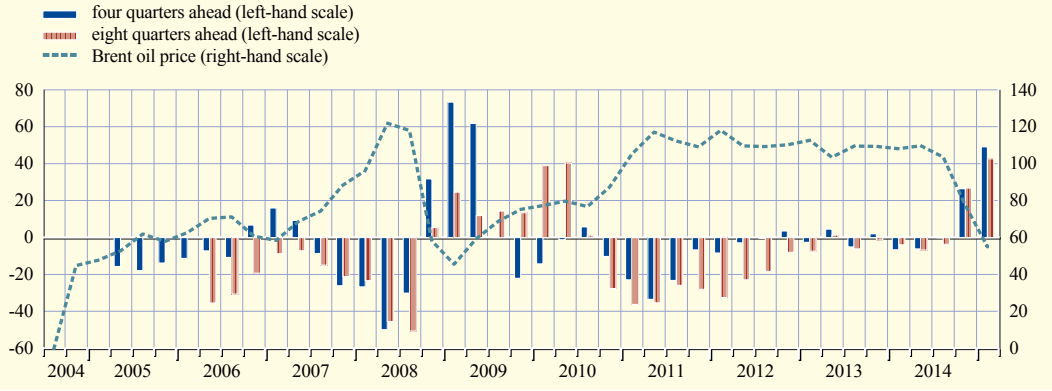

Source: Bloomberg.
Note: The grey lines represent individual forecasts.

futures market, the latter two are typical for oil as a storable commodity with limited inventories. The convenience yield is the benefit of holding inventories and tends to be larger than the other components driving the wedge between futures and spot prices. As a result, spot prices are typically higher than futures prices, defining a downward slope which is also known as backwardation. The reason for this is that when oil markets are tight, demand for inventories at the spot price is high, bringing spot prices up relative to futures prices. However, the futures curve can also be upward sloping, a situation also known as contango. This situation occurred in the recent past owing to ample oil supply combined with a high level of inventories, and it also occurred before and after the global recession (see Chart 3). However, since 1999 the futures curve has been downward sloping for about 70% of the time.

**In addition to following a generally downward sloping path, futures curves are typically rather flat owing to the arbitrage between spot and futures prices.** Futures therefore tend to predict oil prices quite well in times of stable prices, while forecast errors are high when oil prices are volatile. Chart 4 shows that for 2012 and 2013, futures for four and eight quarters ahead provided

**Chart 4 Forecast errors of futures**

(USD per barrel)




Source: ECB calculations.

fairly accurate projections as oil prices were relatively stable. However, forecast errors were large in periods of falling and rising oil prices, such as around the period of the global financial crisis and during the most recent episode of falling oil prices.

**Overall, oil price futures are an imperfect reflection of market expectations owing to the fact that arbitrage opportunities lead to a rather flat profile of the futures curve and the convenience yield typically results in a downward sloping futures curve**. Neither of these features are directly related to market expectations of future oil price developments. While changes in the slope of the futures curve can provide some information about market expectations regarding current and expected oil demand and supply fundamentals, overall the futures curve has not proved to be a good predictor of oil prices.

## 4 ALTERNATIVE APPROACHES TO OIL PRICE FORECASTING

**The literature on oil price forecasting has grown rapidly over the past few years, partly as a response to the shortcomings of futures-based predictions.** These alternative forecast approaches can be divided into three broad categories: (i) market-based and statistical approaches, (ii) approaches based on economic theory, and (iii) model forecast combinations. This section briefly discusses selected models in each of these categories.

**First, market-based indices or statistical methods have the advantage of being simple and transparent forecasting tools, but generally do not manage to consistently outperform other methods.** With regard to market-based forecasts, an alternative to futures are "risk-adjusted" futures, which attempt to correct the negative bias of the futures-based forecast by adjusting it for a risk premium. This risk premium, which affects the spread between the oil futures and the spot price, varies over time and is related to the business cycle. The risk-adjusted futures are found to outperform futures particularly at longer horizons beyond six months.[9] With regard to other statistical approaches, alternative methods of forecasting oil prices include the random walk (which assumes the future oil price to be equal to the price today), the random walk with drift (which assumes oil prices to grow at a specific rate), and simple autoregressive moving average models. However, none of these simple approaches tend to outperform other methods such as futures-based forecasting in a robust manner across forecast horizons and over time.

**Second, forecast models that include data on economic determinants tend to forecast more accurately than simple approaches.** Such models are based on the observation that oil prices are largely determined by movements in economic variables such as oil demand and supply, global economic growth and interest rates. As such, to the extent that these economic variables contain information on future oil price developments, including them in forecasting models tends to improve the oil price prediction. There are many possible forecast approaches that are based on economic theory, ranging from simple regressions to more complex multi-variable models.

**For example, including data on non-oil commodities, oil supply and global economic activity helps in more accurately forecasting oil prices over specific forecast horizons and time periods.** Based on the intuition that movements in non-oil commodities reflect movements in global commodity demand, forecasting oil prices using the recent growth rate of non-oil commodity prices appears successful in predicting oil prices in the short run. Simple regressions

9 See Pagano, P. and Pisani, M., "Risk-Adjusted Forecasts of Oil Prices", *The B.E. Journal of Macroeconomics*, Vol. 9(1), 2009.

linking the oil price prediction to changes in the risk-free interest rate and exchange rates of major commodity exporters have also been explored in the literature, among many other approaches.[10] Although they are more highly parameterised, vector autoregression (VAR) models that include data on oil production, inventories and global economic activity have proved to forecast oil prices more accurately than the random walk or futures over specific time periods, mainly in the short run. Using Bayesian techniques to estimate the VAR model can further improve the forecast accuracy of these VAR-based projections.[11] Finally, structural models of the oil market can also be useful for oil price forecasting. For example, it has been shown that a general equilibrium model consisting of oil-exporting and importing regions that models long-term oil price dynamics can improve the forecast relative to futures in periods of rising oil prices, benefiting from, among other features, the inclusion in the model of a detailed structure of the supply side of the oil market and the assumption that oil prices follow a trend.[12]

**However, the general problem with individual forecast methods is that their forecast performance tends to be very unstable over time given the frequent changes in oil market dynamics.** As already indicated in Section 2, this is because many models capture only a specific behaviour of oil prices over a particular horizon, and oil price dynamics tend to change considerably over time depending on the driving factor. For example, VAR models which include data on economic activity and oil fundamentals tend to result in accurate forecasts of short-run oil price movements that are driven by changes in global economic activity. However, they quickly lose their accuracy when other factors play a larger role and at longer forecast horizons.

**By pooling projections from different forecast approaches, forecast model combinations tend to offer a more accurate forecast that is also more stable over time**. These types of forecast model are based on the recognition of the instability in the performance of individual methods. It is well established in the forecast combination literature that it is helpful to combine individual forecasts that have diverse forecast properties in order to find a projection which is more robust vis-à-vis structural breaks in the variable to be forecasted.[13] Given the frequent changes in oil market dynamics, a model forecast combination has proved to perform well in oil price forecasting.[14]

## 5 A FORECAST COMBINATION FOR BRENT OIL PRICES

**This section introduces a forecast combination which has been newly developed at the ECB for predicting Brent oil prices and investigates its performance in the context of the Eurosystem/ ECB staff macroeconomic projections.** This model combination[15] is constructed as an equally weighted average of the individual projections generated by (i) futures, which provide the current baseline in the Eurosystem/ECB staff macroeconomic projections; (ii) "risk-adjusted" futures, which provide a statistical model that aims to correct the forecast error of futures by adjusting

10 For an overview, see Alquist, R., Kilian, L. and Vigfusson, R.J., "Forecasting the Price of Oil", in Elliott, G. and Timmermann, A. (eds.), *Handbook of Economic Forecasting*, Vol. 2, 2013, pp. 427-507.

11 See Kilian, L. and Baumeister, C., "Real-Time Forecasts of the Real Price of Oil", *Journal of Business & Economic Statistics*, Vol. 30(2), April 2012, pp. 326-336.

12 See Nakov, A. and Nuño, G., "Saudi Arabia and the Oil Market", *The Economic Journal*, Vol. 132, 2013, pp. 1333-1362, and Manescu, C. and Van Robays, I., "Forecasting the Brent oil price: addressing time-variation in forecast performance", *Working Paper Series*, No 1735, ECB, 2014.

13 See, for example, Timmermann, A., "Forecast Combinations", *Handbook of Economic Forecasting*, Vol. 1, 2006, pp. 135-196.

14 For WTI oil prices, see for example Baumeister, C., Kilian, L. and Lee, T.K., "Are there gains from pooling real-time oil price forecasts?", *Energy Economics*, Vol. 46, December 2014, pp. 33-43. For Brent oil prices, see Manescu, C. and Van Robays, I., "Forecasting the Brent oil price: addressing time-variation in forecast performance", *Working Paper Series*, No 1735, ECB, 2014.

15 The model combination is based on the findings of Manescu, C. and Van Robays, I., "Forecasting the Brent oil price: addressing time-variation in forecast performance", *Working Paper Series*, No 1735, ECB, 2014.

for a time-varying risk premium linked to US economic activity; (iii) a Bayesian VAR (BVAR) model, which is an empirical model based on data related to oil fundamentals (oil production and oil inventories) and global economic activity; and (iv) a dynamic stochastic general equilibrium (DSGE) model, which is a theoretical model of the long-term dynamics in the oil market (including data on global and Saudi Arabian oil production and global economic activity) in which oil prices are assumed to follow a trend.

**The advantages of using this specific combination are shown in a real-time and out-of-sample evaluation exercise that follows the set-up of the Eurosystem/ECB staff macroeconomic projections** (see Box 1 for details on the set-up of the evaluation exercise). The results demonstrate that also when following the set-up of the projections, the four-model forecast combination manages to improve the forecast accuracy over futures on average, reduce the negative forecast bias and, at the same time, offer a more robust forecast performance over time, justifying the use of the model combination as an alternative to the oil price forecast based on futures. In addition, as already mentioned in the previous section, individual models can perform quite differently depending on the behaviour of oil prices, which is why the performance of the individual models is examined not only for the 1995-2014 period as a whole, but also for sub-periods (see Table 2).

Box 1

## THE SET-UP OF THE FORECAST PERFORMANCE EVALUATION EXERCISE

This box provides an overview of how the forecast performance of the different models and of the model combination[1] is evaluated.

The evaluation focuses on real oil prices in US dollars and is conducted in real time and out of sample, at the cut-off dates for the projections using data from the first quarter of 1995 to the last quarter of 2014.[2] For the estimation of BVAR model parameters, data back to January 1973 are used. When monthly data are not available over the full estimation sample or are only available with delay, the series are backcast or nowcast in a way largely similar to the approach of Baumeister and Kilian.[3] For the risk-adjusted futures, monthly futures contract data from January 1990 onwards are used.[4] All models are re-estimated at each point in time in the evaluation exercise, except for the DSGE model, the parameters of which are calibrated.[5] The forecast evaluation is applied to quarterly forecasts, up to 11 quarters ahead, which are obtained by aggregating the monthly forecasts. Real rather than nominal oil prices are used for two reasons. First, two of the models included in the combination, i.e. the BVAR and the

1 The model combination and the different models that are included in the combination are those proposed in Manescu, C. and Van Robays, I., "Forecasting the Brent oil price: addressing time-variation in forecast performance", *Working Paper Series*, No 1735, ECB, 2014.
2 Prior to November 1998, the cut-off dates are artificially generated following the pattern of later cut-off dates.
3 Baumeister, C. and Kilian, L., "Real-Time Forecasts of the Real Price of Oil", *Journal of Business & Economic Statistics*, Vol. 30(2), April 2012, pp. 326-336.
4 For futures contracts with longer maturities, the sample is even shorter, depending on data availability. Where possible, data series have been reconstructed backwards on the basis of growth rates of WTI futures with matching maturity.
5 The DSGE parameters are calibrated using data available over the period from 1973 to 2009. The calibrated parameters refer to long-term trends and relationships based on economic theory which can be assumed not to change frequently over time.

DSGE, already produce forecasts of real oil prices.[6] Second, in practice, given the volatility of oil prices compared with the volatility of inflation, the difference between a focus on real prices and a focus on nominal prices should not be great.[7] Two criteria are used as quantifiers in the evaluation, i.e. the mean squared prediction error (MSPE) and the forecast bias, and the evaluation is applied to different sub-samples such that the stability of the performance over time can also be evaluated. The MSPE is a commonly used measure of forecasting performance. In addition, it is important that policy-makers are aware of the magnitude of the bias inherent in the projections and the probability of making large forecast errors.

6 Forecasting nominal oil prices would add more parameter uncertainty and probably worsen the performance of these two models. As the futures and risk-adjusted futures models retrieve forecasts of nominal oil prices, the approach for the evaluation exercise is to deflate these projections with the expected US CPI, which is forecasted using a three-month moving average process.
7 When the forecast evaluation is conducted again using nominal oil prices, the four-model combination performs broadly the same.

**The performance of the BVAR stands out during periods of stable and moderately increasing oil prices.** Over the period from 1995 to 2001, when oil prices were initially broadly stable and then rose between 1999 and 2001, the BVAR is more accurate than futures for both short-term and longer-term forecast horizons, while the other models are more accurate than futures only in exceptional cases. The improvements vis-à-vis the futures-based model reach up to 24%, but they are not always statistically significant.

**Among the models included in the combination, the DSGE performs remarkably well during periods of increasing oil prices.** For example, during the period 2002-07, the other three models used in the combination broadly outperform futures on the basis of the mean squared prediction error (MSPE) criterion, emphasising the disadvantage of futures forecasts owing to their generally downward sloping curve. Of the three, however, the DSGE performs best, with a 24% improvement for the horizon four quarters ahead, 51% for eight quarters ahead, and 67% for eleven quarters ahead (see Table 2, panel B). All these improvements are statistically significant. The success of the

**Table 2 Mean squared prediction errors of real oil price forecasts relative to futures**

**Panel A**

| Selected horizon (quarters) | 1995-2014 | | | | 1995-2001 | | | |
|---|---|---|---|---|---|---|---|---|
| | Adjusted futures | BVAR | DSGE | Four-model combination | Adjusted futures | BVAR | DSGE | Four-model combination |
| 1 | 1.01 | 1.19 | 1.88 * | 1.18 * | **0.99** | **0.94** | 1.37 | 1.02 |
| 2 | 1.03 | 1.06 | 1.33 | 1.04 | 1.07 | **0.82** | 1.47 | **0.96** |
| 4 | **0.95** | **0.92** | **0.93** | **0.89** * | 1.11 | **0.88** * | 1.63 | **0.87** |
| 8 | **0.78** | **0.98** | **0.95** | **0.76** * | 1.27 | 1.08 | 3.27 * | **0.84** |
| 11 | **0.90** | **0.90** | **0.78** | **0.69** * | 1.26 | **0.76** | 3.88 * | **0.58** * |

**Panel B**

| Selected horizon (quarters) | 2002-2007 | | | | 2008-2014 | | | |
|---|---|---|---|---|---|---|---|---|
| | Adjusted futures | BVAR | DSGE | Four-model combination | Adjusted futures | BVAR | DSGE | Four-model combination |
| 1 | 1.02 | 1.00 | 1.19 | **0.99** | 1.00 | 1.27 | 2.15 * | 1.26 * |
| 2 | **0.94** | **0.94** | **0.83** | **0.87** * | 1.04 | 1.11 | 1.43 | 1.09 * |
| 4 | **0.81** | **0.82** * | **0.76** * | **0.82** * | 1.02 | **0.99** | **0.95** | **0.94** |
| 8 | **0.88** | **0.73** * | **0.49** * | **0.72** * | **0.50** | 1.36 * | 1.15 * | **0.82** * |
| 11 | 1.11 | **0.66** * | **0.33** * | **0.70** * | **0.25** | 1.58 * | 1.11 | **0.69** |

Source: ECB calculations.
Notes: The table shows the mean squared prediction errors (MSPE) relative to futures for the other models: risk-adjusted futures ("adjusted futures"), BVAR, DSGE and the four-model forecast combination (the latter in blue). A value lower than one means that the method outperforms futures on average over the sample period indicated at the top of each table section. The numbers in bold indicate an improvement relative to futures. * indicates that the results are statistically significant according to at least one of the following tests: Diebold Mariano, White and Hansen.

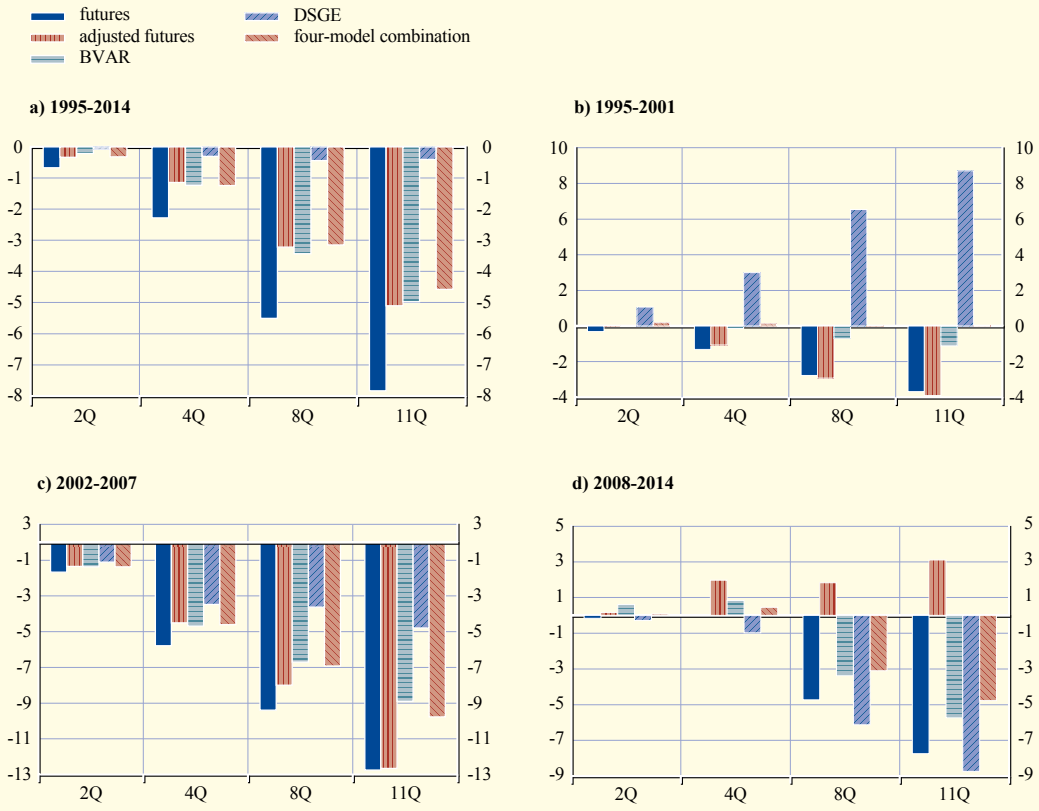
DSGE model during this period is partly due to the assumption that oil prices follow a trend. Nevertheless, this compensates for the very poor performance of the DSGE model in the other sub-samples.

**During the more recent 2008-14 period, when oil prices were initially very volatile and then stabilised, the risk-adjusted futures model is very successful in forecasting at longer time horizons, while futures are successful at shorter horizons.** From the second year onwards, the risk-adjusted futures model clearly outperforms futures. Moreover, the MSPE improvement is very high: 50% for the horizon eight quarters ahead and 75% for eleven quarters ahead.[16] Futures seem to perform well during this period for shorter time horizons, as demonstrated by the MSPE values (see Table 2, panel B). This assessment is also supported by the low forecast bias situated around zero for this particular period and these particular horizons.

**All models included in the combination manage to improve on the significant negative forecast bias of futures, which is mainly due to the backwardation characteristic of the oil futures curve.** This seems to apply in particular to the DSGE model, which has an average forecast

**Chart 5 Bias of real oil price forecasts for selected time horizons**

(USD per barrel deflated by US CPI index)




Source: ECB calculations.
Notes: The chart shows the bias, i.e. the mean forecast error, for the various models (futures, risk-adjusted futures, BVAR, DSGE, and the four-model forecast combination) for the main sample and different sub-samples at selected forecast horizons (two, four, eight and eleven quarters ahead).

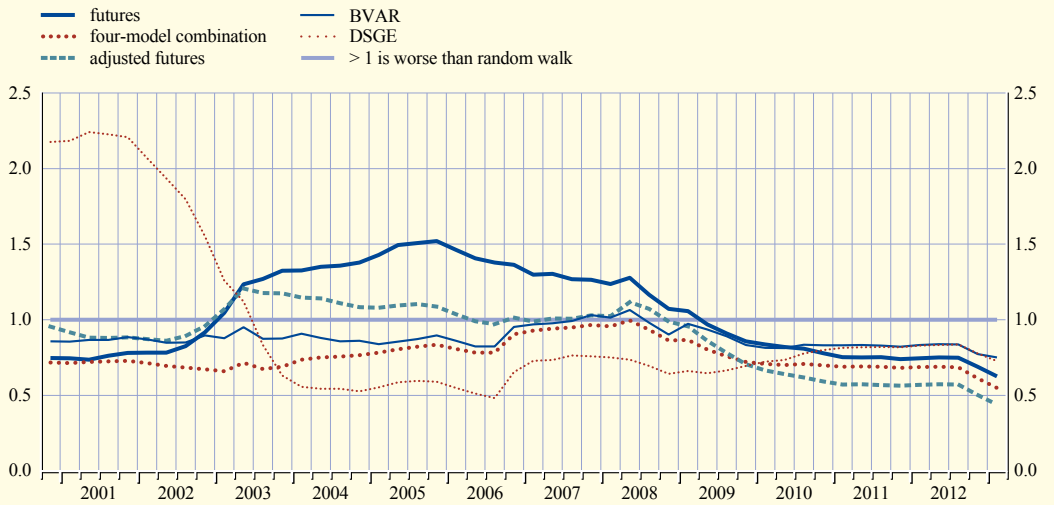
16 It should be noted that, for this period, the estimation sample – which for the risk-adjusted futures model only begins in January 1990 – is considerably larger, with up to 156 observations, which is twice the estimation sample size for the 1995-2001 period. For a model that is mainly based on ordinary least squares, this can result in greater consistency and robustness in the results.

bias of around zero over the whole evaluation period (see Chart 5). However, caution is needed in interpreting this finding, as this low value hides a high positive bias during the period from 1995 to 2001 that is balanced out by a large negative bias in the subsequent periods. This notwithstanding, during periods of increasing oil prices, i.e. 2002 to 2007, the DSGE has the lowest bias. As also suggested by the MSPE, the BVAR has the lowest bias in times of stable and locally increasing oil prices, while the risk-adjusted futures model has the lowest bias in times of decreasing and stable oil prices, but only for longer time horizons, i.e. seven to eleven quarters ahead.

**It is thus clear that the different models perform well in specific periods and over specific horizons. As such, owing to these clear differences in forecast properties, combining the models offers substantial gains in forecast accuracy, both over time and across forecast horizons**. Over the whole period from 1995 to 2014, the four-model forecast combination is more accurate than futures on average by 11%, 24% and 31% at forecast horizons four, eight and eleven quarters ahead respectively (see Table 2). At the same time, it reduces the negative forecast bias of futures on average by 46%, 43% and 42% at horizons four, eight and eleven quarters ahead respectively. The differences are all statistically significant, showing that the combination does a much better job than futures at longer time horizons, which are also more policy-relevant. In fact, the only horizons at which the combination does not outperform futures are the first and second quarters ahead. Notably, the four-model forecast combination outperforms not only futures as of the third quarter ahead but also all other models it includes.

**In addition, the performance of the four-model combination is very stable over time.** For instance, in all sub-samples evaluated, the combination outperforms futures beyond the first and/or second quarter ahead. Moreover, it also outperforms the other three models in most cases, with two notable exceptions: first, the DSGE model when oil prices follow an upward trend and, second, in times of oil price volatility, the risk-adjusted futures model as of the horizon six quarters ahead. The gains offered by the latter are, however, not statistically significant (see Chart 6).

**Chart 6 Performance of the four-model combination and its underlying models across periods of various oil market dynamics relative to the random walk**




Source: ECB calculations.
Note: Six-year rolling MSPE of the different models based on the six-quarters-ahead forecast relative to the random walk forecast.

**All in all, combining individual projections offers several advantages for oil price forecasting relative to futures.** The four-model combination generates a more accurate oil price forecast than futures, especially at longer policy-relevant time horizons, and helps to avoid large forecast errors on average. At the same time, the four-model combination has the disadvantage of being more complex than futures as a forecasting tool.

**Overall, the four-model combination is a useful tool for forecasting oil prices.** As the combination entails models that contain data on oil fundamentals, it manages to hedge against risks related to strong movements in oil prices which are driven by oil fundamentals, similar to the way in which portfolio diversification hedges against individual investment risk. These strong movements are typically captured less well by futures given their relatively flat profile.

## 6 CONCLUSION

**As oil prices have evolved very differently over time, accurately forecasting oil prices using one specific forecasting approach is challenging.** Oil price futures, which are used for oil price forecasting by many policy institutions, including the ECB, have the advantage of being a simple and transparent forecasting tool. However, contrary to widespread opinion, futures are only an imperfect reflection of market expectations, and their typically flat and downward sloping profile causes large forecast errors in periods in which oil prices are volatile or steadily increasing. In turn, this can result in large forecast errors for inflation.

**Forecast models that include data on economic fundamentals tend to forecast oil prices more accurately than simple benchmarks, although their performance tends to be very unstable over time.** As movements in oil prices can to a large extent be explained by changes in oil fundamentals and global economic activity, it has been shown that including information on these variables can improve the oil price forecast in periods when futures do not perform well. A problem with most forecast approaches, however, is that they only manage to capture a specific behaviour of oil prices over particular forecast horizons. As such, their accuracy might be very unstable over time and across forecast horizons.

**By pooling individual projections that have different forecast properties, a forecast combination can offer accuracy gains by comparison with an individual forecasting method and at the same time generate a projection which has a more stable performance over time.** This article has shown that a four-model combination recently developed at the ECB improves the accuracy of oil price forecasts relative to those based on futures and other individual projections and seems to better hedge against making large forecast errors on average when oil price dynamics change. At the same time, using futures as a baseline has the advantage of providing a transparent and simple tool which is easy to communicate to the public.

**It is therefore useful to cross-check the futures-based forecast with the projections based on this four-model combination to assess the risks surrounding the futures-based oil price baseline in the context of the Eurosystem/ECB staff macroeconomic projections exercise.**

# STATISTICS

## CONTENTS



## FURTHER INFORMATION

| | |
|---|---|
| ECB statistics can be accessed and downloaded 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/act2a.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

## CUT-OFF DATE

In general, the cut-off date for the statistics included in the Economic Bulletin is the day preceding the Governing Council's regular monetary policy meeting.
For this issue, the cut-off date was 2 June 2015.

# I 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 |
| 2012 | 3.0 | 2.3 | 0.7 | 1.7 | 7.8 | -0.8 | 2.3 | 1.8 | 2.1 | 2.8 | 0.0 | 2.7 | 2.5 |
| 2013 | 3.2 | 2.2 | 1.7 | 1.6 | 7.7 | -0.4 | 1.6 | 1.6 | 1.5 | 2.6 | 0.4 | 2.6 | 1.4 |
| 2014 | 3.3 | 2.4 | 2.8 | -0.1 | 7.4 | 0.9 | 1.7 | 1.8 | 1.6 | 1.5 | 2.7 | 2.0 | 0.4 |
| 2014 Q2 | 0.8 | 1.1 | 0.8 | -1.8 | 2.0 | 0.1 | 2.1 | 1.9 | 2.1 | 1.7 | 3.6 | 2.2 | 0.6 |
| Q3 | 0.9 | 1.2 | 0.6 | -0.5 | 1.9 | 0.2 | 1.8 | 1.9 | 1.8 | 1.5 | 3.3 | 2.0 | 0.4 |
| Q4 | 0.8 | 0.5 | 0.6 | 0.3 | 1.5 | 0.3 | 1.4 | 1.8 | 1.2 | 0.9 | 2.5 | 1.5 | 0.2 |
| 2015 Q1 | . | -0.2 | 0.3 | 0.6 | 1.3 | 0.4 | 0.6 | 1.7 | -0.1 | 0.1 | 2.3 | 1.2 | -0.3 |
| 2014 Dec. | - | - | - | - | - | - | 1.1 | 1.8 | 0.8 | 0.5 | 2.4 | 1.5 | -0.2 |
| 2015 Jan. | - | - | - | - | - | - | 0.5 | 1.8 | -0.1 | 0.3 | 2.4 | 0.8 | -0.6 |
| Feb. | - | - | - | - | - | - | 0.6 | 1.7 | 0.0 | 0.0 | 2.2 | 1.4 | -0.3 |
| Mar. | - | - | - | - | - | - | 0.6 | 1.7 | -0.1 | 0.0 | 2.3 | 1.4 | -0.1 |
| Apr. | - | - | - | - | - | - | 0.4 | 1.6 | -0.2 | -0.1 | 0.6 | 1.5 | 0.0 |
| May [3] | - | - | - | - | - | - | . | . | . | . | . | . | 0.3 |

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

| | Purchasing Managers' Surveys (diffusion indices; s.a.) | | | | | | | | | Merchandise imports [4] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Composite Purchasing Managers' Index | | | | | | Global Purchasing Managers' Index [5] | | | | | |
| | Global [5] | 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 |
| 2012 | 52.6 | 54.4 | 52.0 | 49.9 | 50.9 | 47.2 | 50.2 | 51.9 | 48.5 | 3.9 | 2.5 | 4.8 |
| 2013 | 53.4 | 54.8 | 56.8 | 52.6 | 51.5 | 49.7 | 52.3 | 52.7 | 50.7 | 3.5 | -0.2 | 5.6 |
| 2014 | 54.3 | 57.3 | 57.9 | 50.9 | 51.1 | 52.7 | 53.4 | 54.1 | 51.5 | 3.8 | 3.4 | 4.0 |
| 2014 Q2 | 54.3 | 58.3 | 58.6 | 48.5 | 50.7 | 53.4 | 53.2 | 54.7 | 51.1 | -0.3 | 1.0 | -1.0 |
| Q3 | 55.7 | 59.8 | 58.5 | 51.3 | 52.2 | 52.8 | 54.1 | 56.2 | 52.0 | 2.8 | 1.3 | 3.6 |
| Q4 | 53.4 | 55.6 | 56.3 | 50.9 | 51.4 | 51.5 | 52.8 | 53.6 | 50.8 | 1.6 | 1.8 | 1.5 |
| 2015 Q1 | 54.0 | 56.9 | 57.4 | 50.4 | 51.5 | 53.3 | 53.3 | 54.3 | 50.7 | -2.3 | 1.5 | -4.3 |
| 2014 Dec. | 52.6 | 53.5 | 55.3 | 51.9 | 51.4 | 51.4 | 52.3 | 52.7 | 51.2 | 1.6 | 1.8 | 1.5 |
| 2015 Jan. | 53.1 | 54.4 | 56.7 | 51.7 | 51.0 | 52.6 | 53.1 | 53.1 | 51.0 | -0.2 | 2.0 | -1.3 |
| Feb. | 54.0 | 57.2 | 56.6 | 50.0 | 51.8 | 53.3 | 53.4 | 54.2 | 50.7 | -1.2 | 2.2 | -3.0 |
| Mar. | 55.0 | 59.2 | 58.9 | 49.4 | 51.8 | 54.0 | 53.3 | 55.5 | 50.2 | -2.3 | 1.5 | -4.3 |
| Apr. | 54.2 | 57.0 | 58.4 | 50.7 | 51.3 | 53.9 | 51.4 | 55.1 | 49.5 | . | . | . |
| May | . | 56.1 | 55.8 | 51.6 | 51.2 | 53.6 | 51.5 | . | 49.0 | . | . | . |

Sources: Eurostat (Table 1.1, col. 3,6,10,13); BIS (Table 1.1, col. 2,4,9,11,12); OECD (Table 1.1, col. 1,5,7,8); Markit (Table 1.2, col. 1-9); CPB Netherlands Bureau for Economic Policy Analysis and ECB calculations (Table 1.2, col. 10-12)

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, which usually cover around 95% of the euro area, as well as on early information on energy prices.
4) 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.
5) Excluding the euro area.

# 2 FINANCIAL DEVELOPMENTS

## 2.1 Money market interest rates

*(percentages per annum; period averages)*

| | Euro area [1] | | | | | United States | Japan |
|---|---|---|---|---|---|---|---|
| | Overnight deposits (EONIA) | 1-month deposits (EURIBOR) | 3-month deposits (EURIBOR) | 6-month deposits (EURIBOR) | 12-month deposits (EURIBOR) | 3-month deposits (LIBOR) | 3-month deposits (LIBOR) |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2012 | 0.23 | 0.33 | 0.57 | 0.83 | 1.11 | 0.43 | 0.19 |
| 2013 | 0.09 | 0.13 | 0.22 | 0.34 | 0.54 | 0.27 | 0.15 |
| 2014 | 0.09 | 0.13 | 0.21 | 0.31 | 0.48 | 0.23 | 0.13 |
| 2014 Q2 | 0.19 | 0.22 | 0.30 | 0.39 | 0.57 | 0.23 | 0.13 |
| Q3 | 0.02 | 0.07 | 0.16 | 0.27 | 0.44 | 0.23 | 0.13 |
| Q4 | -0.02 | 0.01 | 0.08 | 0.18 | 0.33 | 0.24 | 0.11 |
| 2015 Q1 | -0.05 | 0.00 | 0.05 | 0.12 | 0.25 | 0.26 | 0.10 |
| 2014 Dec. | -0.03 | 0.02 | 0.08 | 0.18 | 0.33 | 0.24 | 0.11 |
| 2015 Jan. | -0.05 | 0.01 | 0.06 | 0.15 | 0.30 | 0.25 | 0.10 |
| Feb. | -0.04 | 0.00 | 0.05 | 0.13 | 0.26 | 0.26 | 0.10 |
| Mar. | -0.05 | -0.01 | 0.03 | 0.10 | 0.21 | 0.27 | 0.10 |
| Apr. | -0.07 | -0.03 | 0.00 | 0.07 | 0.18 | 0.28 | 0.10 |
| May | -0.11 | -0.05 | -0.01 | 0.06 | 0.17 | 0.28 | 0.10 |

## 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 |
| 2012 | 0.06 | -0.04 | -0.01 | 0.58 | 1.72 | 1.76 | 1.61 | 1.48 | -0.09 | 0.17 | 1.84 | 3.50 |
| 2013 | 0.08 | 0.09 | 0.25 | 1.07 | 2.24 | 2.15 | 2.91 | 2.66 | 0.18 | 0.67 | 2.53 | 3.88 |
| 2014 | -0.02 | -0.09 | -0.12 | 0.07 | 0.65 | 0.74 | 1.95 | 1.45 | -0.15 | -0.11 | 0.58 | 1.77 |
| 2014 Q2 | 0.05 | -0.01 | 0.02 | 0.47 | 1.44 | 1.45 | 2.43 | 2.16 | -0.04 | 0.16 | 1.46 | 3.09 |
| Q3 | -0.03 | -0.09 | -0.10 | 0.24 | 1.06 | 1.15 | 2.39 | 1.88 | -0.14 | -0.02 | 1.03 | 2.53 |
| Q4 | -0.02 | -0.09 | -0.12 | 0.07 | 0.65 | 0.74 | 1.95 | 1.45 | -0.15 | -0.11 | 0.58 | 1.77 |
| 2015 Q1 | -0.21 | -0.25 | -0.22 | -0.08 | 0.26 | 0.51 | 1.69 | 1.19 | -0.20 | -0.20 | 0.29 | 0.81 |
| 2014 Dec. | -0.02 | -0.09 | -0.12 | 0.07 | 0.65 | 0.74 | 1.95 | 1.45 | -0.15 | -0.11 | 0.58 | 1.77 |
| 2015 Jan. | -0.15 | -0.18 | -0.14 | -0.02 | 0.39 | 0.58 | 1.50 | 1.04 | -0.13 | -0.10 | 0.34 | 1.15 |
| Feb. | -0.21 | -0.25 | -0.20 | -0.08 | 0.37 | 0.62 | 1.80 | 1.45 | -0.16 | -0.17 | 0.31 | 1.19 |
| Mar. | -0.21 | -0.25 | -0.22 | -0.08 | 0.26 | 0.51 | 1.69 | 1.19 | -0.20 | -0.20 | 0.29 | 0.81 |
| Apr. | -0.28 | -0.26 | -0.21 | 0.03 | 0.42 | 0.68 | 1.81 | 1.39 | -0.22 | -0.08 | 0.46 | 1.05 |
| May | -0.24 | -0.25 | -0.23 | 0.06 | 0.61 | 0.85 | 1.87 | 1.32 | -0.25 | -0.14 | 0.68 | 1.46 |

## 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 |
| 2012 | 239.7 | 2,411.9 | 503.7 | 151.9 | 385.7 | 307.2 | 122.1 | 330.2 | 219.2 | 235.9 | 268.5 | 523.3 | 1,379.4 | 9,102.6 |
| 2013 | 281.9 | 2,794.0 | 586.3 | 195.0 | 468.2 | 312.8 | 151.5 | 402.7 | 274.1 | 230.6 | 253.4 | 629.4 | 1,643.8 | 13,577.9 |
| 2014 | 318.7 | 3,145.3 | 644.3 | 216.6 | 510.6 | 335.5 | 180.0 | 452.9 | 310.8 | 279.2 | 306.7 | 668.1 | 1,931.4 | 15,460.4 |
| 2014 Q2 | 326.5 | 3,214.0 | 657.3 | 219.5 | 524.2 | 360.3 | 184.5 | 471.9 | 305.3 | 284.9 | 311.9 | 656.5 | 1,900.4 | 14,655.0 |
| Q3 | 319.4 | 3,173.1 | 645.9 | 213.8 | 509.8 | 351.1 | 178.9 | 446.0 | 315.3 | 288.7 | 304.0 | 686.1 | 1,975.9 | 15,553.1 |
| Q4 | 313.0 | 3,102.5 | 634.9 | 214.7 | 508.5 | 307.0 | 174.5 | 433.4 | 316.0 | 280.4 | 316.7 | 688.0 | 2,009.3 | 16,660.1 |
| 2015 Q1 | 351.8 | 3,442.0 | 730.7 | 253.9 | 619.6 | 304.1 | 186.1 | 496.1 | 362.5 | 286.1 | 370.1 | 773.4 | 2,063.8 | 18,226.2 |
| 2014 Dec. | 320.1 | 3,159.8 | 651.0 | 225.2 | 532.6 | 288.5 | 176.0 | 446.1 | 330.1 | 284.7 | 335.3 | 687.6 | 2,054.3 | 17,541.7 |
| 2015 Jan. | 327.4 | 3,207.3 | 671.1 | 237.8 | 564.9 | 285.0 | 173.3 | 464.2 | 339.0 | 278.3 | 343.8 | 724.2 | 2,028.2 | 17,274.4 |
| Feb. | 353.2 | 3,453.8 | 731.3 | 254.2 | 624.8 | 314.0 | 185.5 | 498.7 | 361.1 | 286.9 | 376.8 | 768.6 | 2,082.2 | 18,053.2 |
| Mar. | 373.9 | 3,655.3 | 787.2 | 268.9 | 666.9 | 313.5 | 198.9 | 524.1 | 386.2 | 292.9 | 389.2 | 824.6 | 2,080.4 | 19,197.6 |
| Apr. | 383.3 | 3,733.8 | 798.2 | 275.7 | 678.6 | 331.0 | 204.9 | 535.7 | 394.2 | 299.5 | 395.0 | 861.4 | 2,094.9 | 19,767.9 |
| May | 373.4 | 3,617.9 | 765.0 | 268.9 | 662.1 | 326.5 | 199.3 | 522.4 | 389.5 | 294.0 | 389.2 | 827.6 | 2,111.9 | 19,974.2 |

Source: ECB.

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

2) ECB calculations based on underlying data provided by EuroMTS and ratings provided by Fitch Ratings.

## 2.4 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 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | By initial period of rate fixation | | APRC [3)] | | By initial period of rate fixation | | | | APRC [3)] | Composite cost-of-borrowing indicator |
| | Overnight | Redeemable at notice of up to 3 months | With an agreed maturity of: Up to 2 years | With an agreed maturity of: 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 |
| 2014 Apr. | 0.27 | 1.06 | 1.54 | 1.83 | 7.61 | 17.22 | 5.58 | 6.60 | 6.98 | 3.21 | 2.72 | 2.91 | 3.00 | 3.24 | 3.22 | 2.99 |
| May | 0.27 | 1.05 | 1.40 | 1.72 | 7.55 | 17.23 | 5.62 | 6.73 | 7.09 | 3.33 | 2.71 | 2.87 | 2.96 | 3.14 | 3.16 | 2.93 |
| June | 0.27 | 1.04 | 1.32 | 1.74 | 7.58 | 17.19 | 5.45 | 6.61 | 6.94 | 3.20 | 2.66 | 2.85 | 2.89 | 3.09 | 3.13 | 2.87 |
| July | 0.24 | 1.01 | 1.30 | 1.75 | 7.43 | 17.04 | 5.55 | 6.54 | 6.91 | 3.09 | 2.63 | 2.75 | 2.81 | 2.99 | 3.05 | 2.79 |
| Aug. | 0.24 | 0.93 | 1.21 | 1.66 | 7.43 | 17.00 | 5.55 | 6.52 | 6.87 | 3.09 | 2.56 | 2.74 | 2.73 | 2.87 | 2.98 | 2.75 |
| Sep. | 0.23 | 0.92 | 1.19 | 1.70 | 7.32 | 17.05 | 5.37 | 6.49 | 6.84 | 2.92 | 2.50 | 2.69 | 2.63 | 2.83 | 2.89 | 2.68 |
| Oct. | 0.22 | 0.91 | 1.10 | 1.65 | 7.15 | 16.94 | 5.42 | 6.43 | 6.84 | 2.92 | 2.43 | 2.63 | 2.56 | 2.79 | 2.82 | 2.61 |
| Nov. | 0.21 | 0.89 | 1.02 | 1.66 | 7.12 | 17.10 | 5.59 | 6.48 | 6.83 | 2.96 | 2.43 | 2.53 | 2.52 | 2.73 | 2.79 | 2.55 |
| Dec. | 0.22 | 0.86 | 0.96 | 1.58 | 7.08 | 17.02 | 5.06 | 6.14 | 6.45 | 2.73 | 2.42 | 2.52 | 2.53 | 2.69 | 2.77 | 2.50 |
| 2015 Jan. | 0.21 | 0.84 | 1.01 | 1.95 | 7.11 | 17.07 | 5.28 | 6.30 | 6.63 | 2.79 | 2.31 | 2.54 | 2.43 | 2.42 | 2.70 | 2.40 |
| Feb. | 0.20 | 0.82 | 0.98 | 1.53 | 7.07 | 17.00 | 5.21 | 6.23 | 6.63 | 2.79 | 2.07 | 2.47 | 2.33 | 2.50 | 2.54 | 2.38 |
| Mar. [(p)] | 0.18 | 0.80 | 0.90 | 1.38 | 7.08 | 17.00 | 5.15 | 6.03 | 6.39 | 2.73 | 2.10 | 2.45 | 2.28 | 2.42 | 2.52 | 2.30 |

## 2.5 MFI interest rates on loans to and deposits from non-financial corporations (new business) [1), 4)]

*(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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | up to EUR 0.25 million | | | over EUR 0.25 and up to 1 million | | | over EUR 1 million | | | |
| | Overnight | With an agreed maturity of: Up to 2 years | With an agreed maturity of: 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 |
| 2014 Apr. | 0.34 | 0.72 | 1.60 | 3.99 | 4.57 | 4.48 | 3.80 | 2.81 | 3.52 | 3.15 | 2.20 | 2.55 | 2.88 | 2.98 |
| May | 0.34 | 0.64 | 1.38 | 3.92 | 4.50 | 4.51 | 3.86 | 2.81 | 3.45 | 3.09 | 2.06 | 2.40 | 2.80 | 2.91 |
| June | 0.31 | 0.59 | 1.52 | 3.88 | 4.29 | 4.37 | 3.78 | 2.68 | 3.26 | 3.05 | 1.94 | 2.74 | 2.68 | 2.79 |
| July | 0.28 | 0.59 | 1.49 | 3.76 | 4.32 | 4.31 | 3.63 | 2.65 | 3.29 | 2.93 | 1.90 | 2.42 | 2.69 | 2.76 |
| Aug. | 0.28 | 0.49 | 1.63 | 3.71 | 4.18 | 4.28 | 3.55 | 2.56 | 3.20 | 2.83 | 1.74 | 2.43 | 2.56 | 2.68 |
| Sep. | 0.26 | 0.51 | 1.53 | 3.69 | 3.98 | 4.04 | 3.53 | 2.46 | 3.02 | 2.75 | 1.80 | 2.38 | 2.41 | 2.65 |
| Oct. | 0.25 | 0.50 | 1.43 | 3.61 | 3.98 | 3.94 | 3.54 | 2.44 | 2.92 | 2.69 | 1.74 | 2.26 | 2.49 | 2.58 |
| Nov. | 0.25 | 0.44 | 1.20 | 3.54 | 3.76 | 3.87 | 3.42 | 2.38 | 2.84 | 2.61 | 1.73 | 2.18 | 2.25 | 2.49 |
| Dec. | 0.24 | 0.43 | 1.29 | 3.44 | 3.68 | 3.74 | 3.27 | 2.35 | 2.78 | 2.47 | 1.74 | 2.18 | 2.09 | 2.43 |
| 2015 Jan. | 0.23 | 0.44 | 1.28 | 3.43 | 3.77 | 3.84 | 2.98 | 2.32 | 2.82 | 2.04 | 1.66 | 2.04 | 2.14 | 2.43 |
| Feb. | 0.22 | 0.35 | 1.09 | 3.37 | 3.55 | 3.71 | 3.12 | 2.24 | 2.70 | 2.37 | 1.52 | 1.99 | 2.13 | 2.34 |
| Mar. [(p)] | 0.21 | 0.33 | 1.14 | 3.33 | 3.45 | 3.65 | 3.12 | 2.16 | 2.69 | 2.31 | 1.62 | 2.10 | 1.99 | 2.34 |

## 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 [5)] | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | MFIs (including Eurosystem) | Non-MFI corporations: Financial corporations other than MFIs | Non-MFI corporations: FVCs [6)] | Non-MFI corporations: Non-financial corporations | General government: Central government | General government: Other general government | Total | MFIs (including Eurosystem) | Non-MFI corporations: Financial corporations other than MFIs | Non-MFI corporations: FVCs [6)] | Non-MFI corporations: Non-financial corporations | General government: Central government | General government: Other general government |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| | Short-term | | | | | | | | | | | | | |
| 2012 | 1,417 | 573 | 146 | . | 75 | 558 | 65 | 702 | 490 | 37 | . | 52 | 103 | 21 |
| 2013 | 1,238 | 468 | 122 | . | 67 | 529 | 53 | 507 | 314 | 30 | . | 44 | 99 | 21 |
| 2014 | 1,247 | 481 | 119 | . | 58 | 538 | 50 | 401 | 211 | 34 | . | 39 | 93 | 25 |
| 2014 Oct. | 1,307 | 495 | 135 | . | 73 | 564 | 41 | 331 | 139 | 29 | . | 37 | 102 | 25 |
| Nov. | 1,295 | 488 | 136 | . | 69 | 557 | 45 | 292 | 127 | 30 | . | 28 | 87 | 20 |
| Dec. | 1,247 | 481 | 119 | . | 58 | 538 | 50 | 319 | 168 | 24 | . | 27 | 66 | 34 |
| 2015 Jan. | 1,310 | 523 | 125 | . | 66 | 543 | 54 | 358 | 167 | 28 | . | 33 | 94 | 36 |
| Feb. | 1,324 | 532 | 133 | . | 70 | 534 | 56 | 336 | 146 | 37 | . | 30 | 83 | 39 |
| Mar. | 1,348 | 535 | 134 | . | 71 | 543 | 66 | 358 | 147 | 45 | . | 35 | 89 | 42 |
| | Long-term | | | | | | | | | | | | | |
| 2012 | 15,233 | 4,823 | 3,184 | . | 842 | 5,758 | 626 | 256 | 99 | 45 | . | 16 | 84 | 12 |
| 2013 | 15,152 | 4,414 | 3,120 | . | 921 | 6,069 | 627 | 223 | 71 | 39 | . | 16 | 89 | 9 |
| 2014 | 15,179 | 4,046 | 3,209 | . | 995 | 6,286 | 643 | 219 | 65 | 43 | . | 16 | 85 | 10 |
| 2014 Oct. | 15,159 | 4,075 | 3,184 | . | 983 | 6,268 | 650 | 210 | 45 | 40 | . | 15 | 102 | 8 |
| Nov. | 15,198 | 4,059 | 3,188 | . | 988 | 6,314 | 649 | 201 | 61 | 46 | . | 14 | 73 | 6 |
| Dec. | 15,179 | 4,046 | 3,209 | . | 995 | 6,286 | 643 | 131 | 42 | 38 | . | 11 | 29 | 10 |
| 2015 Jan. | 15,282 | 4,064 | 3,255 | . | 1,004 | 6,316 | 642 | 261 | 80 | 48 | . | 8 | 113 | 13 |
| Feb. | 15,324 | 4,041 | 3,263 | . | 1,018 | 6,356 | 646 | 207 | 64 | 21 | . | 18 | 86 | 17 |
| Mar. | 15,422 | 4,030 | 3,315 | . | 1,033 | 6,399 | 644 | 285 | 84 | 62 | . | 17 | 112 | 10 |

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).
4) 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.
5) For the purpose of comparison, annual data refer to the average monthly figure over the year.
6) Financial vehicle corporations (FVCs).

## 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 [1] | Non-financial corporations | Central government | Other general government | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| | Oustanding amount | | | | | | | | | | |
| 2012 | 16,649.8 | 5,396.3 | 3,330.1 | . | 916.8 | 6,316.1 | 690.4 | 4,597.1 | 404.7 | 617.9 | 3,574.6 |
| 2013 | 16,389.7 | 4,882.2 | 3,242.3 | . | 987.6 | 6,597.8 | 679.8 | 5,638.0 | 569.1 | 751.0 | 4,317.9 |
| 2014 | 16,425.7 | 4,527.0 | 3,328.3 | . | 1,053.7 | 6,823.7 | 693.0 | 5,949.0 | 591.0 | 787.8 | 4,570.2 |
| 2014 Oct. | 16,466.0 | 4,569.6 | 3,318.8 | . | 1,055.9 | 6,831.2 | 690.5 | 5,764.8 | 611.6 | 764.4 | 4,388.8 |
| Nov. | 16,493.4 | 4,546.9 | 3,323.8 | . | 1,057.7 | 6,871.3 | 693.8 | 6,042.0 | 628.4 | 798.0 | 4,615.7 |
| Dec. | 16,425.7 | 4,527.0 | 3,328.3 | . | 1,053.7 | 6,823.7 | 693.0 | 5,949.0 | 591.0 | 787.8 | 4,570.2 |
| 2015 Jan. | 16,591.8 | 4,586.3 | 3,380.3 | . | 1,070.5 | 6,859.1 | 695.5 | 6,422.8 | 573.0 | 836.0 | 5,013.9 |
| Feb. | 16,647.9 | 4,573.1 | 3,395.6 | . | 1,087.3 | 6,890.5 | 701.4 | 6,855.5 | 650.5 | 899.6 | 5,305.4 |
| Mar. | 16,770.1 | 4,564.6 | 3,449.7 | . | 1,104.1 | 6,941.5 | 710.1 | 7,055.7 | 688.9 | 933.3 | 5,433.5 |
| | Growth rate | | | | | | | | | | |
| 2012 | 1.3 | -1.8 | 0.1 | . | 14.4 | 2.5 | 6.1 | 0.9 | 4.9 | 2.0 | 0.4 |
| 2013 | -1.3 | -8.9 | -2.9 | . | 8.1 | 4.5 | -1.1 | 0.9 | 7.2 | 0.2 | 0.3 |
| 2014 | -0.7 | -8.2 | 0.6 | . | 5.1 | 3.1 | 1.2 | 1.5 | 7.2 | 1.6 | 0.8 |
| 2014 Oct. | -0.7 | -8.2 | 0.4 | . | 5.1 | 3.3 | 1.7 | 1.6 | 6.9 | 1.6 | 0.9 |
| Nov. | -1.0 | -8.5 | 0.1 | . | 4.6 | 2.9 | 1.4 | 1.6 | 7.1 | 1.7 | 0.8 |
| Dec. | -0.7 | -8.2 | 0.6 | . | 5.1 | 3.1 | 1.2 | 1.5 | 7.2 | 1.6 | 0.8 |
| 2015 Jan. | -0.7 | -8.3 | 1.1 | . | 3.1 | 3.2 | 1.8 | 1.5 | 6.9 | 1.5 | 0.7 |
| Feb. | -0.9 | -8.1 | 1.1 | . | 4.5 | 2.4 | 0.7 | 1.4 | 6.8 | 1.2 | 0.7 |
| Mar. | -0.1 | -7.5 | 3.0 | . | 5.4 | 2.6 | 1.8 | 1.5 | 6.8 | 1.4 | 0.8 |

## 2.8 Effective exchange rates [2]

*(period averages; index: 1999 Q1=100)*

| | EER-19 | | | | | | EER-38 | |
|---|---|---|---|---|---|---|---|---|
| | Nominal | Real CPI | Real PPI | Real GDP deflator | Real ULCM [3] | Real ULCT | Nominal | Real CPI |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 2012 | 97.9 | 95.8 | 93.1 | 89.5 | 99.2 | 92.2 | 107.2 | 93.2 |
| 2013 | 101.7 | 99.2 | 96.6 | 92.8 | 101.9 | 94.9 | 112.2 | 96.5 |
| 2014 | 102.3 | 98.9 | 96.5 | 93.0 | 99.5 | 95.7 | 114.8 | 97.0 |
| 2014 Q2 | 103.9 | 100.5 | 98.0 | 94.4 | 101.0 | 97.1 | 116.2 | 98.2 |
| Q3 | 101.7 | 98.2 | 95.9 | 92.3 | 98.5 | 95.1 | 113.8 | 95.9 |
| Q4 | 99.6 | 96.1 | 94.2 | 90.5 | 96.6 | 93.0 | 112.6 | 94.5 |
| 2015 Q1 | 93.7 | 90.4 | 89.5 | . | . | . | 106.9 | 89.3 |
| 2014 Dec. | 99.7 | 96.0 | 94.3 | - | - | - | 113.4 | 94.9 |
| 2015 Jan. | 95.9 | 92.4 | 91.1 | - | - | - | 109.3 | 91.3 |
| Feb. | 94.0 | 90.7 | 89.9 | - | - | - | 107.4 | 89.7 |
| Mar. | 91.4 | 88.2 | 87.5 | - | - | - | 104.2 | 87.0 |
| Apr. | 90.5 | 87.3 | 87.0 | - | - | - | 102.8 | 85.7 |
| May | 92.3 | 89.0 | 88.9 | - | - | - | 105.1 | 87.5 |
| | *Percentage change versus previous month* | | | | | | | |
| 2015 May | 2.0 | 2.0 | 2.2 | - | - | - | 2.2 | 2.0 |
| | *Percentage change versus previous year* | | | | | | | |
| 2015 May | -11.2 | -11.3 | -9.3 | - | - | - | -9.5 | -10.9 |

Source: ECB.
1) Financial vehicle corporations (FVCs).
2) For a definition of the trading partner groups and other information see the General Notes to the Statistics Bulletin.
3) ULCM-deflated series are available only for the EER-19 trading partner group.

## 2.9 Bilateral exchange rates

*(period averages; units of national currency per euro)*

| | Chinese renminbi | Croatian kuna | Czech koruna | Danish krone | Hungarian forint | Japanese yen | Polish zloty | Pound sterling | Romanian leu | Swedish krona | Swiss franc | US Dollar |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 2012 | 8.105 | 7.522 | 25.149 | 7.444 | 289.249 | 102.492 | 4.185 | 0.811 | 4.4593 | 8.704 | 1.205 | 1.285 |
| 2013 | 8.165 | 7.579 | 25.980 | 7.458 | 296.873 | 129.663 | 4.197 | 0.849 | 4.4190 | 8.652 | 1.231 | 1.328 |
| 2014 | 8.186 | 7.634 | 27.536 | 7.455 | 308.706 | 140.306 | 4.184 | 0.806 | 4.4437 | 9.099 | 1.215 | 1.329 |
| 2014 Q2 | 8.544 | 7.599 | 27.446 | 7.463 | 305.914 | 140.001 | 4.167 | 0.815 | 4.4256 | 9.052 | 1.219 | 1.371 |
| Q3 | 8.173 | 7.623 | 27.619 | 7.452 | 312.242 | 137.749 | 4.175 | 0.794 | 4.4146 | 9.205 | 1.212 | 1.326 |
| Q4 | 7.682 | 7.665 | 27.630 | 7.442 | 308.527 | 142.754 | 4.211 | 0.789 | 4.4336 | 9.272 | 1.205 | 1.250 |
| 2015 Q1 | 7.023 | 7.681 | 27.624 | 7.450 | 308.889 | 134.121 | 4.193 | 0.743 | 4.4516 | 9.380 | 1.072 | 1.126 |
| 2014 Dec. | 7.633 | 7.668 | 27.640 | 7.440 | 310.833 | 147.059 | 4.215 | 0.788 | 4.4583 | 9.404 | 1.203 | 1.233 |
| 2015 Jan. | 7.227 | 7.688 | 27.895 | 7.441 | 316.500 | 137.470 | 4.278 | 0.767 | 4.4874 | 9.417 | 1.094 | 1.162 |
| Feb. | 7.096 | 7.711 | 27.608 | 7.450 | 306.884 | 134.686 | 4.176 | 0.741 | 4.4334 | 9.490 | 1.062 | 1.135 |
| Mar. | 6.762 | 7.647 | 27.379 | 7.459 | 303.445 | 130.410 | 4.126 | 0.724 | 4.4339 | 9.245 | 1.061 | 1.084 |
| Apr. | 6.686 | 7.590 | 27.439 | 7.466 | 299.429 | 128.935 | 4.018 | 0.721 | 4.4155 | 9.325 | 1.038 | 1.078 |
| May | 6.916 | 7.559 | 27.397 | 7.461 | 306.327 | 134.748 | 4.081 | 0.721 | 4.4477 | 9.304 | 1.039 | 1.115 |
| | *Percentage change versus previous month* | | | | | | | | | | | |
| 2015 May | 3.4 | -0.4 | -0.2 | -0.1 | 2.3 | 4.5 | 1.6 | 0.0 | 0.7 | -0.2 | 0.1 | 3.4 |
| | *Percentage change versus previous year* | | | | | | | | | | | |
| 2015 May | -19.3 | -0.5 | -0.1 | 0.0 | 0.6 | -3.6 | -2.4 | -11.5 | 0.5 | 3.0 | -14.9 | -18.8 |

## 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) | | | | | | | | | | | |
| 2014 Q1 | 18,138.2 | 19,559.2 | -1,421.0 | 7,453.0 | 5,605.5 | 5,671.2 | 9,279.2 | -56.3 | 4,573.8 | 4,674.4 | 496.6 | 11,536.3 |
| Q2 | 18,624.8 | 19,903.1 | -1,278.3 | 7,503.2 | 5,599.4 | 5,958.7 | 9,632.0 | -50.6 | 4,706.9 | 4,671.7 | 506.6 | 11,685.4 |
| Q3 | 19,346.1 | 20,670.5 | -1,324.5 | 7,723.5 | 5,856.6 | 6,337.2 | 9,967.7 | -74.6 | 4,840.6 | 4,846.2 | 519.3 | 12,062.9 |
| Q4 | 19,541.6 | 20,827.2 | -1,285.6 | 7,541.6 | 5,844.7 | 6,521.7 | 10,127.9 | -38.8 | 4,983.0 | 4,854.6 | 534.1 | 12,093.1 |
| | *Outstanding amounts as a percentage of GDP* | | | | | | | | | | | |
| 2014 Q4 | 193.3 | 206.0 | -12.7 | 74.6 | 57.8 | 64.5 | 100.2 | -0.4 | 49.3 | 48.0 | 5.3 | 119.6 |
| | Transactions | | | | | | | | | | | |
| 2014 Q2 | 215.2 | 125.4 | 89.9 | -4.0 | 0.4 | 160.7 | 190.2 | 16.9 | 41.2 | -65.2 | 0.4 | - |
| Q3 | 192.8 | 111.5 | 81.3 | 65.4 | 42.9 | 114.8 | 22.6 | 18.5 | -4.5 | 46.0 | -1.3 | - |
| Q4 | 86.6 | 11.2 | 75.4 | 70.1 | 65.0 | 92.1 | -1.0 | 10.5 | -88.1 | -52.9 | 2.1 | - |
| 2015 Q1 | 313.6 | 318.3 | -4.7 | 27.2 | 64.9 | 71.2 | 92.4 | 30.1 | 179.3 | 161.0 | 5.8 | - |
| 2014 Oct. | 14.9 | -26.9 | 41.8 | 27.7 | 23.5 | 10.3 | -37.1 | 6.4 | -29.6 | -13.3 | 0.2 | - |
| Nov. | 185.2 | 110.8 | 74.3 | 54.8 | 27.9 | 54.7 | 34.5 | 1.3 | 73.7 | 48.4 | 0.7 | - |
| Dec. | -113.5 | -72.8 | -40.7 | -12.4 | 13.6 | 27.1 | 1.6 | 2.8 | -132.2 | -88.0 | 1.1 | - |
| 2015 Jan. | 252.0 | 268.9 | -16.9 | 14.1 | 8.5 | 8.4 | 40.1 | 10.0 | 218.3 | 220.3 | 1.2 | - |
| Feb. | 79.5 | 62.1 | 17.4 | 34.8 | 33.1 | 44.7 | 37.0 | 9.7 | -13.8 | -8.0 | 4.2 | - |
| Mar. | -18.0 | -12.7 | -5.2 | -21.6 | 23.3 | 18.0 | 15.3 | 10.4 | -25.2 | -51.3 | 0.4 | - |
| | *12-month cumulated transactions* | | | | | | | | | | | |
| 2015 Mar. | 808.2 | 566.3 | 241.9 | 158.7 | 173.1 | 438.7 | 304.2 | 75.9 | 127.9 | 89.0 | 7.0 | - |
| | *12-month cumulated transactions as a percentage of GDP* | | | | | | | | | | | |
| 2015 Mar. | 8.0 | 5.6 | 2.4 | 1.6 | 1.7 | 4.3 | 3.0 | 0.8 | 1.3 | 0.9 | 0.1 | - |

Source: ECB.

1) Net financial derivatives are included in total assets.

# 3 ECONOMIC ACTIVITY

## 3.1 GDP and expenditure components [1)]

*(quarterly data seasonally adjusted; annual data unadjusted)*

| | GDP | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Domestic demand | | | | | | | | External balance | | |
| | | Total | Private consumption | Government consumption | Gross fixed capital formation | | | | Changes in inventories | Total | Exports | Imports |
| | | | | | | Total construction | Total machinery | Intellectual property products | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| | Current prices (EUR billions) | | | | | | | | | | | |
| 2012 | 9,845.6 | 9,582.9 | 5,542.1 | 2,065.5 | 1,980.9 | 1,036.6 | 581.5 | 358.1 | -5.6 | 262.7 | 4,281.0 | 4,018.3 |
| 2013 | 9,930.6 | 9,589.0 | 5,565.3 | 2,097.1 | 1,940.4 | 1,006.3 | 569.0 | 360.2 | -13.9 | 341.6 | 4,357.6 | 4,016.0 |
| 2014 | 10,110.9 | 9,721.4 | 5,650.5 | 2,129.0 | 1,968.3 | 1,010.0 | 584.5 | 368.6 | -26.4 | 389.4 | 4,486.1 | 4,096.6 |
| 2014 Q1 | 2,516.3 | 2,425.6 | 1,404.3 | 529.0 | 493.5 | 255.7 | 145.2 | 91.3 | -1.2 | 90.6 | 1,102.5 | 1,011.9 |
| Q2 | 2,521.9 | 2,427.2 | 1,409.2 | 529.9 | 490.6 | 251.5 | 145.9 | 91.9 | -2.6 | 94.7 | 1,116.5 | 1,021.8 |
| Q3 | 2,533.2 | 2,436.0 | 1,416.7 | 534.2 | 492.2 | 251.2 | 147.1 | 92.6 | -7.1 | 97.2 | 1,133.9 | 1,036.7 |
| Q4 | 2,545.8 | 2,437.1 | 1,423.0 | 534.0 | 495.4 | 253.5 | 147.8 | 92.9 | -15.3 | 108.7 | 1,141.5 | 1,032.7 |
| | *as a percentage of GDP* | | | | | | | | | | | |
| 2012 | 100.0 | 97.3 | 56.3 | 21.0 | 20.1 | 10.5 | 5.9 | 3.6 | 0.0 | 2.7 | - | - |
| 2013 | 100.0 | 96.6 | 56.0 | 21.1 | 19.6 | 10.1 | 5.7 | 3.6 | -0.1 | 3.5 | - | - |
| 2014 | 100.0 | 96.1 | 55.9 | 21.1 | 19.5 | 10.0 | 5.8 | 3.6 | -0.3 | 3.9 | - | - |
| | Chain-linked volumes (prices for the previous year) | | | | | | | | | | | |
| | *quarter-on-quarter percentage changes* | | | | | | | | | | | |
| 2014 Q2 | 0.1 | 0.0 | 0.2 | 0.2 | -0.5 | -1.6 | 0.7 | 0.3 | - | - | 1.3 | 1.3 |
| Q3 | 0.2 | 0.2 | 0.5 | 0.2 | 0.0 | -0.6 | 0.7 | 0.5 | - | - | 1.5 | 1.7 |
| Q4 | 0.3 | 0.1 | 0.4 | 0.2 | 0.4 | 0.8 | 0.0 | -0.1 | - | - | 0.8 | 0.4 |
| 2015 Q1 | 0.4 | . | . | . | . | . | . | . | - | - | . | . |
| | *contributions to quarter-on-quarter percentage changes in GDP; percentage points* | | | | | | | | | | | |
| 2014 Q2 | 0.1 | 0.0 | 0.1 | 0.0 | -0.1 | -0.2 | 0.0 | 0.0 | 0.0 | 0.0 | - | - |
| Q3 | 0.2 | 0.2 | 0.3 | 0.1 | 0.0 | -0.1 | 0.0 | 0.0 | -0.1 | 0.0 | - | - |
| Q4 | 0.3 | 0.1 | 0.2 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | -0.2 | 0.2 | - | - |
| 2015 Q1 | 0.4 | . | . | . | . | . | . | . | . | . | - | - |

## 3.2 Value added by economic activity [1)]

*(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, accommodation and food services | Information and commu-nication | Finance and insurance | Real estate | Professional, business and support services | Public admi-nistration, 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) | | | | | | | | | | | |
| 2012 | 8,851.5 | 152.1 | 1,729.9 | 471.5 | 1,676.2 | 409.3 | 439.4 | 1,014.9 | 925.0 | 1,718.1 | 315.0 | 994.0 |
| 2013 | 8,923.5 | 156.1 | 1,739.7 | 462.1 | 1,684.6 | 403.0 | 440.1 | 1,031.9 | 938.7 | 1,748.3 | 319.0 | 1,007.1 |
| 2014 | 9,075.9 | 147.4 | 1,764.2 | 464.3 | 1,712.7 | 406.6 | 455.2 | 1,055.4 | 960.8 | 1,783.3 | 326.1 | 1,035.0 |
| 2014 Q1 | 2,260.7 | 38.1 | 439.2 | 117.5 | 425.9 | 101.6 | 113.2 | 262.0 | 238.1 | 444.2 | 80.9 | 255.5 |
| Q2 | 2,262.4 | 37.5 | 440.5 | 115.5 | 426.0 | 101.5 | 114.5 | 263.1 | 239.0 | 443.8 | 80.9 | 259.5 |
| Q3 | 2,273.1 | 36.2 | 442.7 | 115.1 | 429.2 | 101.7 | 114.3 | 264.4 | 240.7 | 446.9 | 81.8 | 260.1 |
| Q4 | 2,283.8 | 35.7 | 444.8 | 116.7 | 432.2 | 101.9 | 113.4 | 265.7 | 243.1 | 448.1 | 82.3 | 262.0 |
| | *as a percentage of value added* | | | | | | | | | | | |
| 2012 | 100.0 | 1.7 | 19.5 | 5.3 | 18.9 | 4.6 | 5.0 | 11.5 | 10.5 | 19.4 | 3.6 | - |
| 2013 | 100.0 | 1.8 | 19.5 | 5.2 | 18.9 | 4.5 | 4.9 | 11.6 | 10.5 | 19.6 | 3.6 | - |
| 2014 | 100.0 | 1.6 | 19.5 | 5.1 | 18.9 | 4.5 | 5.0 | 11.6 | 10.6 | 19.6 | 3.6 | - |
| | Chain-linked volumes (prices for the previous year) | | | | | | | | | | | |
| | *quarter-on-quarter percentage changes* | | | | | | | | | | | |
| 2014 Q1 | 0.3 | 1.0 | 0.0 | 0.7 | 0.6 | -0.4 | 0.6 | 0.4 | 0.5 | 0.3 | 0.3 | -0.2 |
| Q2 | 0.0 | -0.4 | 0.2 | -1.5 | -0.1 | -0.1 | -0.8 | 0.3 | 0.2 | 0.1 | -0.3 | 0.9 |
| Q3 | 0.2 | 0.7 | 0.1 | -0.9 | 0.5 | 0.5 | 0.3 | 0.3 | 0.5 | 0.0 | 0.7 | -0.3 |
| Q4 | 0.2 | -2.0 | 0.0 | 1.0 | 0.5 | 0.0 | -0.1 | 0.2 | 0.6 | 0.3 | 0.1 | 1.1 |
| | *contributions to quarter-on-quarter percentage changes in value added; percentage points* | | | | | | | | | | | |
| 2014 Q1 | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | - |
| Q2 | 0.0 | 0.0 | 0.0 | -0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | - |
| Q3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | - |
| Q4 | 0.2 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | - |

Sources: Eurostat and ECB calculations.

1) Data refer to the Euro 19.

## 3.3 Short-term business statistics

| | Industrial production | | | | | | Const-ruction produc-tion | ECB indicator on industrial new orders | Retail sales | | | | New passenger car regist-rations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total (excluding construction) | | Main Industrial Groupings | | | | | | Total | Food, beverages, tobacco | Non-food | Fuel | |
| | | Manu-facturing | Inter-mediate goods | Capital goods | Consumer goods | Energy | | | | | | | |
| % of total in 2010 | 100.0 | 86.0 | 33.6 | 29.2 | 22.5 | 14.7 | 100.0 | 100.0 | 100.0 | 39.3 | 51.5 | 9.1 | 100.0 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| | annual percentage changes | | | | | | | | | | | | |
| 2012 | -2.4 | -2.6 | -4.5 | -1.0 | -2.5 | -0.1 | -4.9 | -3.7 | -1.6 | -1.3 | -1.5 | -5.0 | -11.0 |
| 2013 | -0.7 | -0.7 | -1.0 | -0.6 | -0.4 | -0.8 | -3.2 | -0.1 | -0.8 | -0.9 | -0.6 | -0.9 | -4.4 |
| 2014 | 0.8 | 1.7 | 1.2 | 1.8 | 2.6 | -5.5 | 1.7 | 3.3 | 1.3 | 0.3 | 2.4 | 0.4 | 3.7 |
| 2014 Q2 | 0.8 | 1.6 | 1.4 | 0.9 | 3.3 | -5.3 | 3.0 | 3.6 | 1.4 | 1.1 | 2.0 | -0.3 | 3.9 |
| Q3 | 0.5 | 1.1 | 0.5 | 1.4 | 1.9 | -3.4 | -1.1 | 2.3 | 0.8 | -0.3 | 2.0 | -0.5 | 4.1 |
| Q4 | 0.3 | 1.0 | -0.4 | 0.9 | 2.6 | -3.1 | -0.6 | 2.8 | 2.1 | 0.7 | 3.2 | 1.4 | 1.6 |
| 2015 Q1 | 1.5 | 1.1 | -0.1 | 0.6 | 2.7 | 4.4 | -0.5 | 0.9 | 2.3 | 1.0 | 3.4 | 2.3 | 9.0 |
| 2014 Nov. | -0.5 | 0.3 | -0.7 | -0.8 | 3.0 | -5.3 | 0.1 | 1.4 | 1.4 | -0.2 | 2.8 | 0.3 | 0.3 |
| Dec. | 0.8 | 1.5 | 0.2 | 2.0 | 1.6 | -1.9 | -2.1 | 3.0 | 3.2 | 2.1 | 4.0 | 2.7 | 0.0 |
| 2015 Jan. | 0.7 | 0.3 | -0.1 | 0.2 | 0.8 | 2.7 | 0.7 | 0.5 | 2.5 | 2.0 | 3.1 | 2.9 | 11.0 |
| Feb. | 1.9 | 1.2 | -0.2 | 1.2 | 2.4 | 7.0 | -3.5 | 0.4 | 2.6 | 0.9 | 3.9 | 3.3 | 8.1 |
| Mar. | 1.8 | 1.7 | 0.0 | 0.3 | 4.8 | 3.8 | -2.7 | 1.8 | 1.7 | 0.1 | 3.2 | 0.8 | 8.2 |
| Apr. | . | . | . | . | . | . | . | . | 2.2 | 1.1 | 3.3 | 3.2 | 6.5 |
| | month-on-month percentage changes (s.a.) | | | | | | | | | | | | |
| 2014 Nov. | 0.2 | 0.3 | 0.1 | -0.1 | 0.4 | -0.2 | -0.3 | -1.3 | 0.6 | 0.3 | 1.0 | 0.2 | -2.5 |
| Dec. | 0.6 | 0.6 | 1.2 | 1.2 | -0.6 | 0.9 | 0.4 | 2.4 | 0.5 | 0.3 | 0.5 | 1.8 | 5.5 |
| 2015 Jan. | -0.1 | -0.5 | -0.1 | -0.4 | -0.3 | 1.2 | 1.0 | -2.2 | 0.3 | 0.8 | 0.4 | 1.0 | 2.0 |
| Feb. | 1.0 | 1.0 | 0.2 | 0.7 | 1.6 | 1.0 | -1.6 | -0.2 | 0.1 | -0.7 | 0.7 | -0.8 | -0.2 |
| Mar. | -0.3 | -0.1 | -0.3 | -0.9 | 2.0 | -1.7 | 0.8 | 1.2 | -0.6 | -0.6 | -0.5 | -1.4 | -0.8 |
| Apr. | . | . | . | . | . | . | . | . | 0.7 | 1.3 | 0.3 | 0.6 | 1.1 |

## 3.4 Employment [1)]

*(quarterly data seasonally adjusted; annual data unadjusted)*

| | | By employment status | | By economic activity | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Employees | Self-employed | Agriculture, forestry and fishing | Manu-facturing, energy and utilities | Const-ruction | Trade, trans-port, accommo-dation and food services | Information and commu-nication | Finance and insurance | Real estate | Professional, business and support services | Public admini-stration, edu-cation, health and social work | Arts, enter-tainment 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* | | | | | | | | | | | | |
| 2012 | 100.0 | 85.0 | 15.0 | 3.4 | 15.4 | 6.4 | 24.9 | 2.7 | 2.7 | 1.0 | 12.7 | 23.8 | 7.0 |
| 2013 | 100.0 | 85.0 | 15.0 | 3.4 | 15.2 | 6.2 | 24.9 | 2.7 | 2.7 | 1.0 | 12.8 | 24.0 | 7.0 |
| 2014 | 100.0 | 85.2 | 14.8 | 3.4 | 15.1 | 6.0 | 25.0 | 2.7 | 2.7 | 1.0 | 13.0 | 24.0 | 7.0 |
| | *annual percentage changes* | | | | | | | | | | | | |
| 2012 | -0.5 | -0.5 | -0.4 | -1.3 | -0.7 | -4.4 | -0.5 | 0.7 | -0.4 | 0.1 | 0.5 | -0.2 | 0.6 |
| 2013 | -0.7 | -0.7 | -0.9 | -1.3 | -1.6 | -4.3 | -0.5 | -0.2 | -1.1 | -0.7 | 0.2 | -0.1 | -0.1 |
| 2014 | 0.6 | 0.8 | -0.5 | -0.2 | 0.0 | -1.7 | 0.9 | 1.0 | -1.0 | 0.6 | 2.0 | 0.8 | 0.6 |
| 2014 Q1 | 0.2 | 0.3 | -0.2 | 0.8 | -0.8 | -2.3 | 0.4 | 0.4 | -0.9 | 0.9 | 1.2 | 0.8 | -0.2 |
| Q2 | 0.6 | 0.8 | -0.7 | -0.5 | 0.0 | -1.9 | 0.9 | 0.8 | -1.2 | 0.7 | 2.2 | 0.8 | 0.3 |
| Q3 | 0.7 | 1.0 | -0.6 | -0.6 | 0.3 | -1.3 | 1.1 | 1.4 | -1.0 | 0.2 | 2.1 | 0.8 | 0.6 |
| Q4 | 0.9 | 1.1 | -0.6 | -0.5 | 0.5 | -1.3 | 1.1 | 1.2 | -1.1 | 0.6 | 2.5 | 0.8 | 1.7 |
| | Hours worked | | | | | | | | | | | | |
| | *as a percentage of total hours worked* | | | | | | | | | | | | |
| 2012 | 100.0 | 80.1 | 19.9 | 4.4 | 15.7 | 7.2 | 25.9 | 2.8 | 2.8 | 1.0 | 12.4 | 21.6 | 6.3 |
| 2013 | 100.0 | 80.1 | 19.9 | 4.4 | 15.6 | 6.9 | 25.9 | 2.8 | 2.8 | 1.0 | 12.5 | 21.7 | 6.3 |
| 2014 | 100.0 | 80.2 | 19.8 | 4.4 | 15.6 | 6.7 | 26.0 | 2.8 | 2.7 | 1.0 | 12.6 | 21.8 | 6.3 |
| | *annual percentage changes* | | | | | | | | | | | | |
| 2012 | -1.8 | -1.8 | -1.7 | -2.0 | -2.3 | -6.9 | -2.0 | 0.2 | -1.2 | -0.8 | -0.6 | -0.7 | -0.3 |
| 2013 | -1.2 | -1.2 | -1.1 | -0.8 | -1.7 | -5.3 | -0.9 | -0.4 | -1.4 | -1.4 | -0.4 | -0.4 | -0.7 |
| 2014 | 0.6 | 0.9 | -0.3 | 0.4 | 0.5 | -1.4 | 0.8 | 0.9 | -1.3 | 0.1 | 1.9 | 0.9 | 0.2 |
| 2014 Q1 | 0.8 | 0.8 | 0.8 | 1.6 | 0.6 | -0.5 | 0.8 | 0.8 | -0.6 | 0.7 | 1.2 | 1.3 | -0.6 |
| Q2 | 0.4 | 0.7 | -0.8 | -0.3 | -0.3 | -2.0 | 0.7 | 0.8 | -1.9 | 0.1 | 1.8 | 0.9 | 0.3 |
| Q3 | 0.5 | 0.9 | -0.8 | -0.4 | 0.4 | -1.7 | 1.0 | 1.0 | -1.7 | -0.5 | 1.9 | 0.7 | 0.0 |
| Q4 | 1.1 | 1.4 | 0.1 | 1.1 | 1.2 | -0.7 | 1.2 | 1.2 | -1.9 | 0.7 | 2.6 | 0.9 | 1.4 |
| | Hours worked per person employed | | | | | | | | | | | | |
| | *annual percentage changes* | | | | | | | | | | | | |
| 2012 | -1.3 | -1.3 | -1.3 | -0.7 | -1.6 | -2.6 | -1.5 | -0.6 | -0.7 | -0.9 | -1.1 | -0.5 | -0.9 |
| 2013 | -0.4 | -0.5 | -0.1 | 0.5 | 0.0 | -1.0 | -0.4 | -0.1 | -0.4 | -0.7 | -0.6 | -0.3 | -0.6 |
| 2014 | 0.1 | 0.1 | 0.2 | 0.5 | 0.5 | 0.3 | -0.1 | 0.0 | -0.3 | -0.5 | -0.1 | 0.1 | -0.4 |
| 2014 Q1 | 0.6 | 0.5 | 1.0 | 0.8 | 1.3 | 1.8 | 0.4 | 0.4 | 0.3 | -0.2 | 0.0 | 0.6 | -0.4 |
| Q2 | -0.2 | -0.1 | -0.2 | 0.2 | -0.3 | -0.1 | -0.2 | 0.0 | -0.7 | -0.6 | -0.3 | 0.1 | -0.1 |
| Q3 | -0.2 | -0.1 | -0.2 | 0.1 | 0.2 | -0.4 | -0.2 | -0.4 | -0.8 | -0.7 | -0.2 | -0.1 | -0.6 |
| Q4 | 0.2 | 0.2 | 0.7 | 1.6 | 0.7 | 0.7 | 0.1 | 0.0 | -0.8 | 0.2 | 0.1 | 0.2 | -0.4 |

Sources: Eurostat, ECB calculations, ECB experimental statistics (Table 3.3, col. 8) and European Automobile Manufacturers Association (Table 3.3, col. 13).
1) Data refer to the Euro 19. Data for employment are based on the ESA 2010.

## 3.5 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 unemployment % of labour force [1] | By age | | | | By gender | | | | |
| | | | | | | Adult | | Youth | | Male | | Female | | |
| | | | Millions | % of labour force | | Millions | % of labour force | Millions | % of labour force | Millions | % of labour force | Millions | % of labour force | % of total posts |
| % of total in 2013 | | | 100.0 | | | 81.3 | | 18.7 | | 53.6 | | 46.4 | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 2012 | 159.225 | 3.9 | 18.195 | 11.4 | 5.3 | 14.634 | 10.1 | 3.561 | 23.6 | 9.761 | 11.3 | 8.434 | 11.5 | 1.6 |
| 2013 | 159.341 | 4.3 | 19.222 | 12.0 | 5.9 | 15.625 | 10.7 | 3.597 | 24.3 | 10.301 | 11.9 | 8.921 | 12.1 | 1.5 |
| 2014 | 159.534 | 4.3 | 18.613 | 11.6 | 6.0 | 15.206 | 10.4 | 3.408 | 23.7 | 9.903 | 11.5 | 8.711 | 11.8 | 1.7 |
| 2014 Q2 | 159.296 | 4.4 | 18.647 | 11.6 | 6.0 | 15.222 | 10.4 | 3.425 | 23.8 | 9.938 | 11.5 | 8.709 | 11.8 | 1.7 |
| Q3 | 159.680 | 4.2 | 18.531 | 11.6 | 5.8 | 15.142 | 10.4 | 3.389 | 23.6 | 9.808 | 11.3 | 8.723 | 11.8 | 1.6 |
| Q4 | 160.186 | 4.3 | 18.380 | 11.4 | 6.0 | 15.072 | 10.3 | 3.308 | 23.2 | 9.737 | 11.3 | 8.643 | 11.7 | 1.8 |
| 2015 Q1 | . | . | 18.035 | 11.2 | . | 14.810 | 10.1 | 3.224 | 22.7 | 9.573 | 11.1 | 8.462 | 11.4 | . |
| 2014 Nov. | - | - | 18.441 | 11.5 | - | 15.110 | 10.3 | 3.330 | 23.3 | 9.762 | 11.3 | 8.679 | 11.7 | - |
| Dec. | - | - | 18.241 | 11.4 | - | 14.973 | 10.2 | 3.268 | 22.9 | 9.672 | 11.2 | 8.569 | 11.6 | - |
| 2015 Jan. | - | - | 18.117 | 11.3 | - | 14.874 | 10.2 | 3.244 | 22.8 | 9.635 | 11.1 | 8.482 | 11.4 | - |
| Feb. | - | - | 18.011 | 11.2 | - | 14.791 | 10.1 | 3.219 | 22.7 | 9.554 | 11.0 | 8.457 | 11.4 | - |
| Mar. | - | - | 17.976 | 11.2 | - | 14.766 | 10.1 | 3.210 | 22.6 | 9.530 | 11.0 | 8.446 | 11.4 | - |
| Apr. | - | - | 17.846 | 11.1 | - | 14.678 | 10.0 | 3.168 | 22.3 | 9.431 | 10.9 | 8.415 | 11.3 | - |

## 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 confid-ence indicator | Service industries | | Purchasing Managers' Index (PMI) for manu-facturing | Manufact-uring output | Business activity for services | Composite output |
| | | Industrial confidence indicator | Capacity utilisation (%) | | | | Services confidence indicator | Capacity utilisation (%) | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1999-13 | 100.2 | -6.1 | 80.9 | -12.7 | -13.8 | -8.7 | 6.6 | - | 51.0 | 52.4 | 52.9 | 52.7 |
| 2012 | 90.5 | -11.6 | 78.9 | -22.1 | -27.7 | -15.0 | -6.5 | 86.5 | 46.2 | 46.3 | 47.6 | 47.2 |
| 2013 | 93.8 | -9.1 | 78.7 | -18.6 | -29.2 | -12.2 | -5.4 | 87.1 | 49.6 | 50.6 | 49.3 | 49.7 |
| 2014 | 101.6 | -3.9 | 80.4 | -10.0 | -27.4 | -3.2 | 4.8 | 87.7 | 51.8 | 53.3 | 52.5 | 52.7 |
| 2014 Q2 | 102.6 | -3.3 | 80.2 | -7.7 | -29.9 | -1.8 | 5.1 | 87.6 | 52.4 | 54.5 | 53.1 | 53.4 |
| Q3 | 101.2 | -4.6 | 80.4 | -9.9 | -27.3 | -3.9 | 4.5 | 87.7 | 50.9 | 51.6 | 53.2 | 52.8 |
| Q4 | 100.9 | -4.5 | 80.8 | -11.2 | -24.3 | -5.1 | 5.3 | 87.9 | 50.4 | 51.2 | 51.7 | 51.5 |
| 2015 Q1 | 102.6 | -4.0 | 81.0 | -6.3 | -24.9 | -1.6 | 5.6 | 88.1 | 51.4 | 52.6 | 53.6 | 53.3 |
| 2014 Dec. | 100.9 | -5.0 | - | -10.9 | -24.2 | -4.6 | 6.4 | - | 50.6 | 50.9 | 51.6 | 51.4 |
| 2015 Jan. | 101.5 | -4.5 | 81.0 | -8.5 | -25.3 | -2.7 | 5.3 | 87.8 | 51.0 | 52.1 | 52.7 | 52.6 |
| Feb. | 102.3 | -4.6 | - | -6.7 | -25.1 | -1.3 | 5.3 | - | 51.0 | 52.1 | 53.7 | 53.3 |
| Mar. | 103.9 | -2.9 | - | -3.7 | -24.2 | -0.8 | 6.1 | - | 52.2 | 53.6 | 54.2 | 54.0 |
| Apr. | 103.8 | -3.2 | 81.1 | -4.6 | -25.5 | -0.8 | 7.0 | 88.4 | 52.0 | 53.4 | 54.1 | 53.9 |
| May | 103.8 | -3.0 | - | -5.5 | -25.0 | 1.4 | 7.8 | - | 52.2 | 53.3 | 53.8 | 53.6 |

Sources: Eurostat, ECB calculations, European Commission (Directorate-General for Economic and Financial Affairs) (Table 3.6, col. 1-8), Markit (Table 3.6, col. 9-12).

1) Not seasonally adjusted. Data refer to the Euro 19.
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.

## 3.7 Summary accounts for households and non-financial corporations

*(current prices, unless otherwise indicated; not seasonally adjusted)*

| | Households | | | | | | | Non-financial corporations | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Saving ratio (gross) [1] | Debt ratio | Real gross disposable income | Financial investment | Non-financial investment (gross) | Net worth [2] | Housing wealth | Profit share [3] | Saving ratio (net) | Debt ratio [4] | Financial investment | Non-financial investment (gross) | Financing |
| | Percentage of gross disposable income (adjusted) | | Annual percentage changes | | | | | Percentage of net value added | | Percentage of GDP | Annual percentage changes | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 2011 | 13.0 | 97.9 | -0.1 | 1.9 | 1.8 | 0.5 | 1.1 | 33.6 | 3.6 | . | 3.1 | 9.7 | 2.0 |
| 2012 | 12.7 | 97.7 | -1.7 | 1.8 | -4.1 | 0.7 | -2.2 | 31.0 | 1.6 | 133.9 | 1.0 | -5.9 | 0.9 |
| 2013 | 12.9 | 96.3 | -0.4 | 1.6 | -4.0 | 0.4 | -2.2 | 30.6 | 1.6 | 132.6 | 2.4 | -2.9 | 1.5 |
| 2014 Q1 | 12.8 | 95.7 | 0.3 | 1.4 | 2.9 | 1.9 | -0.9 | 31.1 | 2.2 | 132.7 | 2.1 | 3.6 | 1.2 |
| Q2 | 12.7 | 95.7 | 0.3 | 1.4 | -0.3 | 3.0 | -0.1 | 30.9 | 1.8 | 134.1 | 2.3 | 1.5 | 1.4 |
| Q3 | 12.7 | 95.2 | 1.4 | 1.6 | -0.8 | 2.7 | 0.4 | 31.5 | 2.0 | 133.6 | 1.7 | 2.1 | 1.0 |
| Q4 | 12.7 | 95.1 | 1.5 | 1.8 | -0.3 | 2.6 | 1.0 | 32.2 | 2.7 | 133.4 | 1.6 | 1.7 | 1.0 |

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

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

| | Current account | | | | | | | | | | | Capital account [5] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | | | Goods | | Services | | Primary income | | Secondary income | | | |
| | Credit | Debit | Net | Credit | Debit | Credit | Debit | Credit | Debit | Credit | Debit | Credit | Debit |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 2014 Q2 | 831.4 | 785.2 | 46.1 | 486.8 | 430.6 | 170.2 | 153.0 | 151.8 | 142.2 | 22.6 | 59.5 | 7.6 | 3.3 |
| Q3 | 834.6 | 777.9 | 56.7 | 489.4 | 427.6 | 174.3 | 157.5 | 147.4 | 138.1 | 23.5 | 54.6 | 6.8 | 2.5 |
| Q4 | 842.3 | 777.1 | 65.2 | 503.5 | 428.3 | 175.5 | 163.6 | 140.4 | 125.1 | 22.9 | 60.1 | 12.7 | 5.1 |
| 2015 Q1 | 853.1 | 776.6 | 76.5 | 502.0 | 427.4 | 179.1 | 163.6 | 146.1 | 125.7 | 25.8 | 60.0 | 7.6 | 4.8 |
| 2014 Oct. | 281.5 | 258.2 | 23.3 | 168.3 | 143.0 | 58.0 | 53.6 | 47.3 | 42.6 | 7.9 | 19.0 | 3.3 | 1.2 |
| Nov. | 280.8 | 259.6 | 21.2 | 166.9 | 143.2 | 58.9 | 54.7 | 47.5 | 40.9 | 7.6 | 20.8 | 3.7 | 1.2 |
| Dec. | 280.0 | 259.3 | 20.7 | 168.3 | 142.1 | 58.6 | 55.3 | 45.6 | 41.6 | 7.5 | 20.3 | 5.8 | 2.7 |
| 2015 Jan. | 286.2 | 255.7 | 30.5 | 165.8 | 139.8 | 60.1 | 54.9 | 51.6 | 40.9 | 8.6 | 20.0 | 2.0 | 1.6 |
| Feb. | 284.6 | 257.3 | 27.3 | 168.1 | 141.1 | 59.4 | 54.6 | 48.8 | 41.7 | 8.4 | 20.0 | 1.7 | 1.3 |
| Mar. | 282.3 | 263.7 | 18.6 | 168.1 | 146.5 | 59.6 | 54.1 | 45.7 | 43.1 | 8.9 | 20.0 | 3.8 | 1.9 |
| | *12-month cumulated transactions* | | | | | | | | | | | | |
| 2015 Mar. | 3,361.3 | 3,116.8 | 244.5 | 1,981.7 | 1,713.9 | 699.1 | 637.6 | 585.7 | 531.0 | 94.9 | 234.2 | 34.7 | 15.7 |
| | *12-month cumulated transactions as a percentage of GDP* | | | | | | | | | | | | |
| 2015 Mar. | 33.2 | 30.8 | 2.4 | 19.6 | 16.9 | 6.9 | 6.3 | 5.8 | 5.2 | 0.9 | 2.3 | 0.3 | 0.2 |

## 3.9 Euro area external trade in goods [6], values and volumes by product group [7]

*(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) | | | | | | | | | | | | |
| 2014 Q2 | 0.6 | 0.2 | 481.5 | 234.8 | 96.1 | 138.0 | 395.0 | 437.7 | 271.2 | 61.0 | 98.9 | 281.1 | 78.4 |
| Q3 | 2.9 | 0.4 | 486.1 | 236.1 | 96.7 | 139.4 | 397.7 | 439.4 | 269.8 | 61.8 | 100.7 | 287.2 | 73.1 |
| Q4 | 4.4 | -0.2 | 497.8 | 236.9 | 101.9 | 144.7 | 409.0 | 434.6 | 260.0 | 62.8 | 102.0 | 292.2 | 64.2 |
| 2015 Q1 | 5.1 | 0.4 | 503.1 | . | . | . | 418.2 | 439.6 | . | . | . | 308.4 | . |
| 2014 Oct. | 4.3 | -0.1 | 165.8 | 79.5 | 33.9 | 48.1 | 135.4 | 146.1 | 88.9 | 21.2 | 34.0 | 97.1 | 22.8 |
| Nov. | 1.0 | -1.8 | 166.6 | 79.3 | 34.0 | 48.8 | 136.1 | 145.8 | 86.6 | 21.1 | 33.8 | 96.4 | 21.0 |
| Dec. | 8.3 | 1.4 | 165.3 | 78.1 | 34.0 | 47.8 | 137.5 | 142.7 | 84.5 | 20.5 | 34.3 | 98.6 | 20.4 |
| 2015 Jan. | -0.6 | -5.8 | 163.6 | 78.2 | 33.7 | 47.4 | 135.4 | 142.5 | 82.5 | 22.0 | 34.6 | 99.7 | 18.2 |
| Feb. | 4.3 | -0.2 | 168.3 | 80.3 | 34.7 | 49.4 | 140.7 | 145.7 | 84.9 | 22.6 | 35.3 | 103.5 | 18.0 |
| Mar. | 10.9 | 7.2 | 171.1 | . | . | . | 142.1 | 151.4 | . | . | . | 105.2 | . |
| | Volume indices (2000 = 100; annual percentage changes for columns 1 and 2) | | | | | | | | | | | | |
| 2014 Q2 | 0.7 | 2.3 | 114.8 | 113.2 | 114.1 | 117.2 | 115.5 | 101.5 | 101.6 | 98.7 | 102.8 | 103.7 | 93.2 |
| Q3 | 1.1 | 2.0 | 114.5 | 112.6 | 114.2 | 116.3 | 114.7 | 101.4 | 101.1 | 99.9 | 102.7 | 104.4 | 88.3 |
| Q4 | 2.9 | 1.6 | 117.0 | 113.3 | 118.7 | 120.8 | 116.7 | 101.7 | 101.5 | 97.8 | 101.5 | 103.8 | 93.5 |
| 2015 Q1 | . | . | . | . | . | . | . | . | . | . | . | . | . |
| 2014 Oct. | 2.3 | 0.9 | 116.8 | 113.5 | 119.6 | 119.9 | 116.3 | 101.0 | 101.4 | 98.4 | 101.6 | 103.4 | 89.8 |
| Nov. | -0.7 | -1.0 | 117.4 | 113.5 | 118.9 | 122.2 | 116.4 | 102.2 | 100.6 | 100.7 | 100.5 | 103.1 | 89.6 |
| Dec. | 7.4 | 5.2 | 117.0 | 112.8 | 117.8 | 120.3 | 117.5 | 102.0 | 102.4 | 94.4 | 102.4 | 104.7 | 101.2 |
| 2015 Jan. | -2.0 | -0.9 | 115.6 | 112.6 | 116.8 | 119.0 | 114.8 | 103.4 | 103.3 | 101.1 | 101.5 | 104.6 | 110.9 |
| Feb. | 1.5 | 3.0 | 117.4 | 114.7 | 119.5 | 121.3 | 118.5 | 103.2 | 104.2 | 100.0 | 101.7 | 106.2 | 103.7 |
| Mar. | . | . | . | . | . | . | . | . | . | . | . | . | . |

Sources: ECB and Eurostat.

1) Based on four-quarter cumulated sums of both saving and gross disposable income (adjusted for the change in the net equity of households in pension fund reserves).
2) Financial assets (net of financial liabilities) and non-financial assets. Non-financial assets consist mainly of housing wealth (residential structures and land). They also include non-financial assets of unincorporated enterprises classified within the household sector.
3) The profit share uses net entrepreneurial income, which is broadly equivalent to current profits in business accounting.
4) Based on the outstanding amount of loans, debt securities, trade credits and pension scheme liabilities.
5) The capital account is not seasonally adjusted.
6) 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.
7) 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) | | | | | | Memo item: Administered prices | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Index: 2005 = 100 | Total | Total excluding food and energy | Goods | Services | Total | Processed food | Unprocessed food | Non-energy industrial goods | Energy (n.s.a.) | Services | Total HICP excluding administered prices | Administered prices |
| % of total in 2015 | 100.0 | 100.0 | 69.7 | 56.5 | 43.5 | 100.0 | 12.2 | 7.5 | 26.3 | 10.6 | 43.5 | 87.1 | 12.9 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 2012 | 115.6 | 2.5 | 1.5 | 3.0 | 1.8 | - | - | - | - | - | - | 2.3 | 3.8 |
| 2013 | 117.2 | 1.4 | 1.1 | 1.3 | 1.4 | - | - | - | - | - | - | 1.2 | 2.1 |
| 2014 | 117.7 | 0.4 | 0.8 | -0.2 | 1.2 | - | - | - | - | - | - | 0.2 | 1.9 |
| 2014 Q2 | 118.2 | 0.6 | 0.8 | 0.0 | 1.3 | 0.0 | 0.1 | -1.1 | -0.1 | -0.3 | 0.3 | 0.3 | 2.2 |
| Q3 | 117.7 | 0.4 | 0.8 | -0.3 | 1.2 | 0.1 | 0.2 | 0.2 | 0.0 | -0.4 | 0.4 | 0.2 | 1.6 |
| Q4 | 117.8 | 0.2 | 0.7 | -0.6 | 1.2 | -0.2 | 0.0 | 0.5 | 0.0 | -3.0 | 0.2 | -0.1 | 1.7 |
| 2015 Q1 | 116.8 | -0.3 | 0.7 | -1.4 | 1.1 | -0.3 | 0.2 | 0.5 | 0.0 | -4.2 | 0.2 | -0.5 | 1.2 |
| 2014 Dec. | 117.7 | -0.2 | 0.7 | -1.2 | 1.2 | -0.3 | 0.1 | -0.3 | 0.0 | -3.3 | 0.0 | -0.4 | 1.6 |
| 2015 Jan. | 115.9 | -0.6 | 0.6 | -1.8 | 1.0 | -0.3 | 0.0 | 0.3 | 0.0 | -3.2 | 0.0 | -0.9 | 1.3 |
| Feb. | 116.6 | -0.3 | 0.7 | -1.4 | 1.2 | 0.3 | 0.2 | 0.6 | 0.0 | 1.6 | 0.3 | -0.5 | 1.2 |
| Mar. | 117.9 | -0.1 | 0.6 | -0.9 | 1.0 | 0.2 | 0.1 | -0.1 | 0.0 | 1.7 | 0.0 | -0.3 | 1.1 |
| Apr. | 118.2 | 0.0 | 0.6 | -0.7 | 1.0 | 0.1 | 0.1 | 0.4 | 0.1 | 0.1 | 0.0 | -0.1 | 0.9 |
| May [2)] | 118.5 | 0.3 | 0.9 | . | 1.3 | 0.3 | 0.0 | 0.3 | 0.1 | 0.8 | 0.3 | . | . |

| | Goods | | | | | | Services | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Food (including alcoholic beverages and tobacco) | | | Industrial goods | | | Housing | | Transport | Communi-cation | Recreation and personal | Miscella-neous |
| | Total | Processed food | Unpro-cessed food | Total | Non-energy industrial goods | Energy | | Rents | | | | |
| % of total in 2015 | 19.7 | 12.2 | 7.5 | 36.9 | 26.3 | 10.6 | 10.7 | 6.4 | 7.3 | 3.1 | 14.8 | 7.5 |
| | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 2012 | 3.1 | 3.1 | 3.0 | 3.0 | 1.2 | 7.6 | 1.8 | 1.5 | 2.9 | -3.2 | 2.2 | 2.0 |
| 2013 | 2.7 | 2.2 | 3.5 | 0.6 | 0.6 | 0.6 | 1.7 | 1.5 | 2.4 | -4.2 | 2.2 | 0.7 |
| 2014 | 0.5 | 1.2 | -0.8 | -0.5 | 0.1 | -1.9 | 1.7 | 1.4 | 1.7 | -2.8 | 1.5 | 1.3 |
| 2014 Q2 | 0.2 | 1.5 | -1.8 | -0.1 | 0.0 | -0.4 | 1.8 | 1.4 | 1.8 | -2.8 | 1.6 | 1.3 |
| Q3 | -0.1 | 1.0 | -2.0 | -0.4 | 0.1 | -1.8 | 1.7 | 1.3 | 1.7 | -3.1 | 1.5 | 1.3 |
| Q4 | 0.3 | 0.7 | -0.3 | -1.1 | -0.1 | -3.6 | 1.6 | 1.4 | 1.6 | -2.6 | 1.4 | 1.4 |
| 2015 Q1 | 0.3 | 0.5 | 0.1 | -2.3 | -0.1 | -7.7 | 1.3 | 1.3 | 1.4 | -1.9 | 1.3 | 1.2 |
| 2014 Dec. | 0.0 | 0.5 | -1.0 | -1.8 | 0.0 | -6.3 | 1.5 | 1.4 | 1.9 | -2.6 | 1.4 | 1.4 |
| 2015 Jan. | -0.1 | 0.4 | -0.8 | -2.8 | -0.1 | -9.3 | 1.4 | 1.4 | 1.4 | -2.1 | 1.2 | 1.2 |
| Feb. | 0.5 | 0.5 | 0.4 | -2.4 | -0.1 | -7.9 | 1.3 | 1.3 | 1.5 | -1.9 | 1.6 | 1.3 |
| Mar. | 0.6 | 0.6 | 0.7 | -1.7 | 0.0 | -6.0 | 1.2 | 1.2 | 1.4 | -1.7 | 1.1 | 1.3 |
| Apr. | 1.0 | 0.7 | 1.3 | -1.6 | 0.1 | -5.8 | 1.2 | 1.3 | 0.7 | -1.2 | 1.2 | 1.2 |
| May [2)] | 1.2 | 0.6 | 2.1 | . | 0.3 | -5.0 | . | . | . | . | . | . |

## 4.2 Industry, construction and property prices

(annual percentage changes, unless otherwise indicated)

| | Industrial producer prices excluding construction | | | | | | | | | | Const-ruction [3)] | Residential property prices [3),4)] | Experimental indicator of commercial property prices [3),4)] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total (index: 2010 = 100) | Total | | Industry excluding construction and energy | | | | | | Energy | | | |
| | | | Manu-facturing | Total | Intermediate goods | Capital goods | Consumer goods | | | | | | |
| | | | | | | | Total | Food, beverages and tobacco | Non-food | | | | |
| % of total in 2010 | 100.0 | 100.0 | 78.0 | 72.1 | 29.3 | 20.0 | 22.7 | 13.8 | 8.9 | 27.9 | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 2012 | 108.7 | 2.8 | 2.0 | 1.4 | 0.7 | 1.0 | 2.5 | 3.5 | 0.9 | 6.6 | 1.5 | -1.7 | 0.4 |
| 2013 | 108.5 | -0.2 | -0.1 | 0.4 | -0.6 | 0.6 | 1.7 | 2.6 | 0.3 | -1.6 | 0.3 | -2.0 | -1.8 |
| 2014 | 106.9 | -1.5 | -0.9 | -0.3 | -1.1 | 0.4 | 0.1 | -0.2 | 0.3 | -4.4 | 0.3 | 0.2 | 1.0 |
| 2014 Q2 | 107.1 | -1.1 | -0.3 | -0.2 | -1.2 | 0.3 | 0.5 | 0.4 | 0.3 | -3.1 | 0.2 | 0.1 | 0.6 |
| Q3 | 106.8 | -1.4 | -0.6 | -0.1 | -0.6 | 0.5 | -0.1 | -0.5 | 0.3 | -4.5 | 0.4 | 0.4 | 1.7 |
| Q4 | 106.0 | -1.9 | -1.6 | -0.3 | -0.7 | 0.6 | -0.6 | -1.2 | 0.2 | -5.8 | 0.2 | 0.8 | 2.5 |
| 2015 Q1 | 104.5 | -2.9 | -2.7 | -0.7 | -1.5 | 0.7 | -0.8 | -1.3 | 0.2 | -8.5 | . | . | . |
| 2014 Nov. | 106.3 | -1.6 | -1.3 | -0.2 | -0.5 | 0.6 | -0.6 | -1.2 | 0.2 | -4.9 | - | - | - |
| Dec. | 105.2 | -2.7 | -2.5 | -0.4 | -1.0 | 0.6 | -0.7 | -1.4 | 0.2 | -8.3 | - | - | - |
| 2015 Jan. | 104.0 | -3.5 | -3.4 | -0.7 | -1.7 | 0.7 | -0.9 | -1.5 | 0.1 | -10.5 | - | - | - |
| Feb. | 104.6 | -2.8 | -2.6 | -0.7 | -1.7 | 0.7 | -0.8 | -1.4 | 0.3 | -8.1 | - | - | - |
| Mar. | 104.9 | -2.3 | -2.0 | -0.5 | -1.3 | 0.7 | -0.6 | -1.2 | 0.2 | -6.8 | - | - | - |
| Apr. | 104.8 | -2.2 | -1.9 | -0.5 | -1.0 | 0.8 | -0.9 | -1.4 | 0.1 | -6.4 | - | - | - |

Sources: Eurostat, ECB calculations, and ECB calculations based on IPD data and national sources (Table 4.2, col. 13).

1) Data refer to the changing composition of the euro area.
2) Estimate based on provisional national data, which usually cover around 95% of the euro area, as well as on early information on energy prices.
3) Data refer to the Euro 19.
4) Experimental data based on non-harmonised sources (see http://www.ecb.europa.eu/stats/intro/html/experiment.en.html for further details).

## 4.3 Commodity prices and GDP deflators

(annual percentage changes, unless otherwise indicated)

| | GDP deflators [1] | | | | | | | | Oil prices (EUR per barrel) | Non-energy commodity prices (EUR) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Domestic demand | | | | Exports [2] | Imports [2] | | Import-weighted [3] | | | Use-weighted [3] | | |
| | Total (s.a.; index: 2010 = 100) | Total | Total | Private consumption | Government consumption | Gross fixed capital formation | | | | Total | Food | Non-food | Total | Food | Non-food |
| % of total | | | | | | | | | | 100.0 | 35.0 | 65.0 | 100.0 | 45.0 | 55.0 |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 2012 | 102.4 | 1.3 | 1.5 | 1.9 | 0.8 | 1.3 | 1.9 | 2.5 | 86.6 | -7.2 | 0.2 | -10.5 | -3.1 | 5.8 | -9.1 |
| 2013 | 103.7 | 1.3 | 0.9 | 1.1 | 1.3 | 0.4 | -0.3 | -1.3 | 81.7 | -9.0 | -13.4 | -6.9 | -8.3 | -10.1 | -6.9 |
| 2014 | 104.7 | 0.9 | 0.6 | 0.6 | 0.8 | 0.4 | -0.7 | -1.7 | 74.5 | -8.8 | -1.6 | -12.1 | -4.6 | 0.7 | -8.7 |
| 2014 Q2 | 104.5 | 0.8 | 0.6 | 0.7 | 0.6 | 0.4 | -0.8 | -1.5 | 79.9 | -7.8 | -1.2 | -11.1 | -4.6 | 1.1 | -9.1 |
| Q3 | 104.8 | 1.0 | 0.6 | 0.5 | 1.0 | 0.5 | -0.5 | -1.4 | 78.0 | -6.2 | -1.7 | -8.3 | -2.1 | 0.2 | -3.8 |
| Q4 | 105.0 | 0.9 | 0.4 | 0.3 | 0.8 | 0.6 | -0.5 | -1.9 | 61.5 | -5.5 | 6.2 | -10.8 | 1.3 | 9.3 | -4.7 |
| 2015 Q1 | . | . | . | . | . | . | . | . | 49.0 | -0.4 | 8.7 | -4.9 | 5.6 | 11.6 | 0.7 |
| 2014 Dec. | - | - | - | - | - | - | - | - | 51.3 | -5.5 | 8.7 | -12.0 | 2.9 | 14.3 | -5.6 |
| 2015 Jan. | - | - | - | - | - | - | - | - | 42.8 | -1.3 | 13.6 | -8.2 | 5.7 | 16.8 | -2.5 |
| Feb. | - | - | - | - | - | - | - | - | 52.0 | -0.8 | 8.4 | -5.4 | 4.7 | 10.5 | 0.1 |
| Mar. | - | - | - | - | - | - | - | - | 52.4 | 1.0 | 4.6 | -1.0 | 6.2 | 7.9 | 4.7 |
| Apr. | - | - | - | - | - | - | - | - | 56.6 | -1.4 | 3.4 | -4.0 | 4.9 | 7.8 | 2.4 |
| May | - | - | - | - | - | - | - | - | 58.9 | -2.1 | 0.9 | -3.7 | 2.6 | 3.7 | 1.7 |

## 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 | |
| | Manufacturing | Retail trade | Services | Construction | | Manufacturing | Services | Manufacturing | Services |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1999-13 | 4.8 | - | - | -1.8 | 34.0 | 57.7 | 56.7 | - | 49.9 |
| 2012 | 2.7 | 8.1 | 2.1 | -12.7 | 38.6 | 52.7 | 55.1 | 49.9 | 47.9 |
| 2013 | -0.3 | 1.7 | -1.2 | -17.1 | 29.8 | 48.5 | 53.8 | 49.4 | 47.8 |
| 2014 | -0.8 | -1.4 | 1.2 | -17.6 | 14.3 | 49.6 | 53.5 | 49.7 | 48.2 |
| 2014 Q2 | -0.9 | -1.0 | 0.7 | -19.9 | 14.9 | 48.7 | 53.9 | 50.0 | 48.7 |
| Q3 | -0.7 | -1.8 | 0.9 | -16.9 | 11.7 | 51.2 | 53.7 | 49.8 | 48.4 |
| Q4 | -2.1 | -4.4 | 2.8 | -15.7 | 7.9 | 48.7 | 52.6 | 49.0 | 47.1 |
| 2015 Q1 | -5.5 | -0.7 | 1.4 | -17.0 | -2.4 | 45.8 | 52.5 | 48.8 | 47.6 |
| 2014 Dec. | -5.1 | -3.5 | 3.2 | -15.2 | 6.4 | 48.1 | 52.0 | 49.1 | 47.7 |
| 2015 Jan. | -6.0 | -3.2 | -0.3 | -17.1 | -0.1 | 42.0 | 50.9 | 48.1 | 46.5 |
| Feb. | -5.8 | 0.5 | 2.0 | -17.7 | -3.4 | 44.7 | 52.4 | 48.6 | 47.6 |
| Mar. | -4.6 | 0.6 | 2.4 | -16.3 | -3.8 | 50.7 | 54.2 | 49.7 | 48.6 |
| Apr. | -2.7 | 2.8 | 2.3 | -17.7 | -2.0 | 52.4 | 53.6 | 50.1 | 48.9 |
| May | -0.5 | 2.3 | 2.5 | -14.1 | -0.7 | 56.0 | 55.4 | 50.0 | 49.3 |

Sources: European Commission (Directorate-General for Economic and Financial Affairs) and Thomson Reuters (Table 4.3, col. 9).

1) Data refer to the Euro 19.

2) Deflators for exports and imports refer to goods and services and include cross-border trade within the euro area.

3) Import-weighted: weighted according to 2004-06 average import structure; use-weighted: weighted according to 2004-06 average domestic demand structure.

## 4.5 Unit labour costs, compensation per labour input and labour productivity [1)]

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

| | Total (index: 2010 =100) | Total | By economic activity | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Agriculture, forestry and fishing | 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 |
| | Unit labour costs | | | | | | | | | | | |
| 2012 | 102.4 | 1.8 | 2.9 | 1.8 | 2.7 | 2.4 | 0.1 | -0.4 | 1.8 | 3.7 | 0.4 | 2.8 |
| 2013 | 103.8 | 1.3 | -2.8 | 1.7 | 0.4 | 1.5 | 1.2 | 2.3 | -2.0 | 1.1 | 1.6 | 1.9 |
| 2014 | 104.8 | 1.0 | -2.6 | 1.4 | 0.2 | 0.6 | 3.0 | 0.7 | 0.2 | 2.2 | 1.2 | 1.1 |
| 2014 Q1 | 104.3 | 0.7 | -3.8 | 0.6 | -0.5 | 0.3 | 3.0 | 0.6 | 0.2 | 1.4 | 1.1 | 0.4 |
| Q2 | 104.6 | 1.0 | -3.5 | 1.1 | -0.1 | 0.8 | 2.8 | 1.0 | 0.0 | 2.6 | 0.9 | 1.3 |
| Q3 | 105.1 | 1.2 | -3.1 | 1.2 | 0.7 | 0.9 | 2.9 | 0.6 | 0.2 | 2.6 | 1.2 | 1.1 |
| Q4 | 105.4 | 1.3 | 0.8 | 2.5 | 0.5 | 0.6 | 2.9 | 0.6 | 0.4 | 2.0 | 1.4 | 1.6 |
| | Compensation per employee | | | | | | | | | | | |
| 2012 | 103.6 | 1.5 | 1.3 | 2.1 | 2.1 | 1.5 | 1.8 | 0.8 | 1.5 | 2.2 | 0.9 | 2.0 |
| 2013 | 105.3 | 1.6 | 1.1 | 2.7 | 1.3 | 1.4 | 1.0 | 2.0 | -0.4 | 1.0 | 1.7 | 1.5 |
| 2014 | 106.7 | 1.3 | 0.0 | 2.1 | 1.4 | 1.1 | 1.9 | 1.5 | 0.8 | 1.5 | 1.2 | 1.2 |
| 2014 Q1 | 106.5 | 1.6 | -0.5 | 2.5 | 2.9 | 1.5 | 2.6 | 0.9 | 0.5 | 1.6 | 1.3 | 1.7 |
| Q2 | 106.6 | 1.2 | 0.0 | 1.9 | 1.4 | 1.1 | 1.8 | 2.0 | 0.5 | 1.4 | 1.1 | 1.3 |
| Q3 | 107.0 | 1.2 | 0.8 | 1.8 | 0.5 | 1.0 | 1.5 | 1.6 | 1.4 | 1.6 | 1.2 | 1.2 |
| Q4 | 107.5 | 1.3 | 0.5 | 2.3 | 1.1 | 1.1 | 1.6 | 1.7 | 1.0 | 1.3 | 1.3 | 0.9 |
| | Labour productivity per person employed | | | | | | | | | | | |
| 2012 | 101.2 | -0.3 | -1.6 | 0.3 | -0.5 | -0.9 | 1.6 | 1.3 | -0.2 | -1.4 | 0.4 | -0.7 |
| 2013 | 101.5 | 0.3 | 4.0 | 1.0 | 0.9 | -0.1 | -0.1 | -0.3 | 1.7 | 0.0 | 0.1 | -0.4 |
| 2014 | 101.8 | 0.3 | 2.7 | 0.7 | 1.3 | 0.5 | -1.0 | 0.8 | 0.6 | -0.7 | 0.1 | 0.2 |
| 2014 Q1 | 102.1 | 0.9 | 3.4 | 1.9 | 3.4 | 1.2 | -0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 1.3 |
| Q2 | 101.9 | 0.2 | 3.7 | 0.7 | 1.5 | 0.3 | -1.1 | 1.0 | 0.5 | -1.2 | 0.1 | 0.0 |
| Q3 | 101.8 | 0.1 | 4.0 | 0.6 | -0.3 | 0.1 | -1.3 | 1.0 | 1.2 | -0.9 | 0.0 | 0.1 |
| Q4 | 102.0 | 0.0 | -0.3 | -0.2 | 0.6 | 0.4 | -1.2 | 1.1 | 0.6 | -0.7 | 0.0 | -0.8 |
| | Compensation per hour worked | | | | | | | | | | | |
| 2012 | 104.7 | 2.8 | 3.1 | 3.7 | 5.0 | 3.2 | 2.2 | 1.3 | 2.0 | 3.3 | 1.3 | 2.9 |
| 2013 | 106.9 | 2.1 | 1.5 | 2.6 | 2.3 | 2.0 | 1.1 | 2.5 | 0.6 | 1.9 | 1.9 | 2.1 |
| 2014 | 108.3 | 1.2 | 0.6 | 1.6 | 1.2 | 1.2 | 1.8 | 1.7 | 0.9 | 1.3 | 1.1 | 1.6 |
| 2014 Q1 | 107.9 | 1.1 | -0.7 | 1.1 | 1.2 | 1.3 | 2.3 | 0.7 | 0.5 | 1.6 | 0.8 | 2.2 |
| Q2 | 108.2 | 1.3 | 1.0 | 2.1 | 1.6 | 1.2 | 1.8 | 2.6 | 1.2 | 1.2 | 0.8 | 1.1 |
| Q3 | 108.6 | 1.3 | 1.5 | 1.6 | 0.6 | 1.2 | 1.6 | 2.0 | 0.9 | 1.3 | 1.3 | 1.9 |
| Q4 | 108.8 | 1.1 | 0.4 | 1.6 | 0.8 | 0.9 | 1.3 | 2.4 | 0.5 | 1.0 | 1.2 | 1.1 |
| | Hourly labour productivity | | | | | | | | | | | |
| 2012 | 102.4 | 1.0 | -0.9 | 1.9 | 2.1 | 0.6 | 2.2 | 2.1 | 0.7 | -0.3 | 0.9 | 0.2 |
| 2013 | 103.1 | 0.7 | 3.5 | 1.0 | 2.0 | 0.3 | 0.0 | 0.1 | 2.4 | 0.6 | 0.4 | 0.2 |
| 2014 | 103.4 | 0.2 | 2.1 | 0.2 | 0.9 | 0.6 | -1.0 | 1.1 | 1.1 | -0.6 | -0.1 | 0.6 |
| 2014 Q1 | 103.5 | 0.3 | 2.6 | 0.6 | 1.5 | 0.8 | -0.7 | 0.0 | 0.5 | 0.1 | -0.4 | 1.7 |
| Q2 | 103.5 | 0.4 | 3.4 | 1.0 | 1.6 | 0.5 | -1.0 | 1.8 | 1.2 | -0.9 | 0.0 | 0.1 |
| Q3 | 103.4 | 0.3 | 3.9 | 0.4 | 0.1 | 0.3 | -0.9 | 1.7 | 1.9 | -0.8 | 0.1 | 0.7 |
| Q4 | 103.3 | -0.2 | -1.9 | -0.9 | 0.0 | 0.3 | -1.3 | 2.0 | 0.4 | -0.8 | -0.2 | -0.4 |

## 4.6 Labour cost indices [1)]

(annual percentage changes, unless otherwise indicated)

| | Total (index: 2008 = 100) | Total | By component | | For selected economic activities | | Memo item: Indicator of negotiated wages [2)] |
|---|---|---|---|---|---|---|---|
| | | | Wages and salaries | Employers' social contributions | Business economy | Mainly non-business economy | |
| % of total in 2008 | 100.0 | 100.0 | 75.2 | 24.8 | 32.4 | 58.6 | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2012 | 108.9 | 2.1 | 2.1 | 2.1 | 2.4 | 1.4 | 2.2 |
| 2013 | 110.3 | 1.4 | 1.5 | 1.0 | 1.3 | 1.6 | 1.8 |
| 2014 | 111.7 | 1.2 | 1.3 | 0.9 | 1.2 | 1.3 | 1.7 |
| 2014 Q2 | 115.7 | 1.5 | 1.5 | 1.4 | 1.6 | 1.3 | 1.8 |
| Q3 | 108.8 | 1.4 | 1.4 | 1.4 | 1.3 | 1.7 | 1.7 |
| Q4 | 118.3 | 1.1 | 1.1 | 1.2 | 1.0 | 1.3 | 1.7 |
| 2015 Q1 | . | . | . | . | . | . | 1.5 |

Sources: Eurostat and ECB calculations.

1) Data refer to the Euro 19.

2) Experimental data based on non-harmonised sources (see http://www.ecb.europa.eu/stats/intro/html/experiment.en.html for further details).

# 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 | | | | | | | | | | | |
| 2012 | 863.4 | 4,244.0 | 5,107.5 | 1,803.3 | 2,081.5 | 3,884.8 | 8,992.3 | 125.0 | 483.1 | 180.6 | 788.7 | 9,780.9 |
| 2013 | 908.8 | 4,482.6 | 5,391.4 | 1,691.2 | 2,123.2 | 3,814.4 | 9,205.8 | 120.0 | 417.7 | 86.5 | 624.3 | 9,830.0 |
| 2014 | 967.3 | 4,948.4 | 5,915.7 | 1,605.6 | 2,129.6 | 3,735.2 | 9,650.9 | 122.2 | 427.4 | 106.2 | 655.8 | 10,306.6 |
| 2014 Q2 | 931.5 | 4,627.3 | 5,558.9 | 1,671.1 | 2,131.2 | 3,802.3 | 9,361.2 | 129.7 | 409.3 | 65.6 | 604.5 | 9,965.7 |
| Q3 | 948.2 | 4,745.2 | 5,693.4 | 1,647.5 | 2,136.6 | 3,784.1 | 9,477.5 | 122.4 | 419.1 | 68.8 | 610.4 | 10,087.8 |
| Q4 | 967.3 | 4,948.4 | 5,915.7 | 1,605.6 | 2,129.6 | 3,735.2 | 9,650.9 | 122.2 | 427.4 | 106.2 | 655.8 | 10,306.6 |
| 2015 Q1 | 993.7 | 5,174.3 | 6,168.0 | 1,529.2 | 2,133.5 | 3,662.7 | 9,830.7 | 125.9 | 436.5 | 91.0 | 653.4 | 10,484.1 |
| 2014 Nov. | 956.5 | 4,858.0 | 5,814.5 | 1,619.3 | 2,138.4 | 3,757.7 | 9,572.2 | 128.2 | 434.6 | 71.6 | 634.5 | 10,206.7 |
| Dec. | 967.3 | 4,948.4 | 5,915.7 | 1,605.6 | 2,129.6 | 3,735.2 | 9,650.9 | 122.2 | 427.4 | 106.2 | 655.8 | 10,306.6 |
| 2015 Jan. | 984.8 | 5,057.3 | 6,042.1 | 1,580.5 | 2,120.7 | 3,701.2 | 9,743.3 | 119.5 | 438.6 | 102.4 | 660.6 | 10,403.9 |
| Feb. | 992.4 | 5,106.6 | 6,099.0 | 1,536.0 | 2,123.4 | 3,659.4 | 9,758.5 | 132.4 | 443.1 | 103.1 | 678.6 | 10,437.1 |
| Mar. | 993.7 | 5,174.3 | 6,168.0 | 1,529.2 | 2,133.5 | 3,662.7 | 9,830.7 | 125.9 | 436.5 | 91.0 | 653.4 | 10,484.1 |
| Apr. [p] | 1,003.3 | 5,189.1 | 6,192.4 | 1,517.4 | 2,151.0 | 3,668.3 | 9,860.7 | 134.0 | 450.7 | 101.1 | 685.8 | 10,546.6 |
| | Transactions | | | | | | | | | | | |
| 2012 | 20.0 | 289.5 | 309.5 | -36.0 | 114.9 | 78.9 | 388.5 | -16.9 | -20.2 | -18.5 | -55.7 | 332.8 |
| 2013 | 45.3 | 245.8 | 291.1 | -111.1 | 43.9 | -67.2 | 223.9 | -12.0 | -48.8 | -62.8 | -123.6 | 100.3 |
| 2014 | 58.0 | 369.4 | 427.4 | -92.7 | 3.5 | -89.2 | 338.1 | 0.8 | 10.8 | 13.2 | 24.7 | 362.9 |
| 2014 Q2 | 6.7 | 61.7 | 68.5 | 2.3 | 5.8 | 8.1 | 76.6 | 12.4 | -4.3 | -7.6 | 0.5 | 77.1 |
| Q3 | 16.7 | 109.1 | 125.7 | -27.1 | 5.1 | -22.0 | 103.8 | -8.1 | 10.0 | 3.4 | 5.3 | 109.1 |
| Q4 | 19.1 | 125.2 | 144.4 | -41.8 | -9.1 | -50.9 | 93.5 | -0.5 | 11.1 | 19.1 | 29.7 | 123.2 |
| 2015 Q1 | 25.2 | 190.0 | 215.2 | -63.9 | 4.7 | -59.2 | 156.0 | 2.4 | 4.9 | -16.5 | -9.1 | 146.9 |
| 2014 Nov. | 7.0 | 64.2 | 71.3 | -6.2 | 5.9 | -0.4 | 70.9 | -2.1 | 2.3 | 4.4 | 4.6 | 75.5 |
| Dec. | 10.8 | 12.7 | 23.5 | -14.2 | -10.5 | -24.7 | -1.1 | -6.3 | -4.6 | 16.8 | 5.8 | 4.6 |
| 2015 Jan. | 16.4 | 81.9 | 98.3 | -35.0 | -8.3 | -43.3 | 55.0 | -3.5 | 7.1 | -4.9 | -1.3 | 53.7 |
| Feb. | 7.6 | 47.6 | 55.2 | -19.2 | 2.7 | -16.5 | 38.7 | 12.8 | 4.4 | 1.8 | 19.0 | 57.7 |
| Mar. | 1.3 | 60.4 | 61.7 | -9.7 | 10.3 | 0.7 | 62.4 | -6.9 | -6.6 | -13.3 | -26.8 | 35.6 |
| Apr. [p] | 9.6 | 36.4 | 46.0 | -9.3 | 3.8 | -5.5 | 40.5 | 8.5 | 14.2 | 11.0 | 33.6 | 74.1 |
| | Growth rates | | | | | | | | | | | |
| 2012 | 2.4 | 7.3 | 6.4 | -1.9 | 5.9 | 2.1 | 4.5 | -11.6 | -3.9 | -9.9 | -6.6 | 3.5 |
| 2013 | 5.2 | 5.8 | 5.7 | -6.2 | 2.1 | -1.7 | 2.5 | -9.5 | -10.4 | -37.8 | -16.2 | 1.0 |
| 2014 | 6.4 | 8.2 | 7.9 | -5.5 | 0.2 | -2.3 | 3.7 | 0.7 | 2.6 | 19.3 | 4.0 | 3.7 |
| 2014 Q2 | 5.6 | 5.4 | 5.4 | -4.6 | 0.5 | -1.8 | 2.4 | 5.1 | -7.5 | -28.8 | -8.7 | 1.6 |
| Q3 | 6.0 | 6.2 | 6.2 | -3.9 | 0.3 | -1.5 | 3.0 | 9.7 | -1.1 | -26.8 | -4.1 | 2.5 |
| Q4 | 6.4 | 8.2 | 7.9 | -5.5 | 0.2 | -2.3 | 3.7 | 0.7 | 2.6 | 19.3 | 4.0 | 3.7 |
| 2015 Q1 | 7.3 | 10.6 | 10.0 | -7.8 | 0.3 | -3.3 | 4.6 | 5.2 | 5.3 | 3.3 | 4.4 | 4.6 |
| 2014 Nov. | 5.9 | 7.1 | 6.9 | -4.5 | 0.4 | -1.8 | 3.3 | 6.8 | 3.7 | -17.7 | 0.6 | 3.1 |
| Dec. | 6.4 | 8.2 | 7.9 | -5.5 | 0.2 | -2.3 | 3.7 | 0.7 | 2.6 | 19.3 | 4.0 | 3.7 |
| 2015 Jan. | 7.7 | 9.2 | 8.9 | -6.7 | -0.1 | -3.0 | 4.0 | -4.7 | 1.3 | 11.1 | 1.0 | 3.8 |
| Feb. | 7.9 | 9.4 | 9.1 | -7.3 | 0.0 | -3.2 | 4.1 | 0.5 | 3.4 | 14.6 | 3.8 | 4.1 |
| Mar. | 7.3 | 10.6 | 10.0 | -7.8 | 0.3 | -3.3 | 4.6 | 5.2 | 5.3 | 3.3 | 4.4 | 4.6 |
| Apr. [p] | 8.2 | 11.0 | 10.5 | -8.2 | 0.5 | -3.3 | 4.9 | 9.9 | 8.9 | 35.5 | 11.6 | 5.3 |

Source: ECB.

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

## 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 | | | | | | | | | | | | |
| 2012 | 1,618.7 | 1,112.8 | 406.9 | 88.1 | 10.8 | 5,308.6 | 2,360.4 | 977.3 | 1,960.3 | 10.5 | 811.2 | 209.1 | 306.3 |
| 2013 | 1,710.6 | 1,198.6 | 400.8 | 94.7 | 16.5 | 5,414.0 | 2,542.6 | 875.7 | 1,991.2 | 4.5 | 801.0 | 192.8 | 298.6 |
| 2014 | 1,813.5 | 1,329.3 | 368.3 | 96.4 | 19.5 | 5,556.7 | 2,753.3 | 810.6 | 1,989.9 | 2.8 | 886.2 | 218.5 | 330.8 |
| 2014 Q2 | 1,751.9 | 1,244.6 | 394.7 | 97.3 | 15.3 | 5,481.4 | 2,623.1 | 859.8 | 1,994.0 | 4.5 | 801.1 | 210.3 | 314.6 |
| Q3 | 1,789.5 | 1,283.8 | 391.1 | 99.2 | 15.4 | 5,531.9 | 2,686.9 | 845.1 | 1,995.1 | 4.9 | 794.8 | 208.4 | 327.1 |
| Q4 | 1,813.5 | 1,329.3 | 368.3 | 96.4 | 19.5 | 5,556.7 | 2,753.3 | 810.6 | 1,989.9 | 2.8 | 886.2 | 218.5 | 330.8 |
| 2015 Q1 | 1,847.0 | 1,392.6 | 340.4 | 99.0 | 14.9 | 5,598.3 | 2,843.8 | 761.7 | 1,988.8 | 3.9 | 953.5 | 225.1 | 339.0 |
| 2014 Nov. | 1,815.9 | 1,319.9 | 382.1 | 100.9 | 13.1 | 5,552.8 | 2,730.7 | 827.2 | 1,990.1 | 4.8 | 839.4 | 211.3 | 324.5 |
| Dec. | 1,813.5 | 1,329.3 | 368.3 | 96.4 | 19.5 | 5,556.7 | 2,753.3 | 810.6 | 1,989.9 | 2.8 | 886.2 | 218.5 | 330.8 |
| 2015 Jan. | 1,853.5 | 1,379.5 | 366.3 | 96.4 | 11.4 | 5,565.6 | 2,786.5 | 795.4 | 1,979.9 | 3.8 | 886.7 | 228.3 | 343.9 |
| Feb. | 1,851.9 | 1,393.7 | 347.1 | 97.2 | 13.9 | 5,566.5 | 2,810.2 | 771.1 | 1,980.9 | 4.3 | 906.0 | 224.4 | 349.6 |
| Mar. | 1,847.0 | 1,392.6 | 340.4 | 99.0 | 14.9 | 5,598.3 | 2,843.8 | 761.7 | 1,988.8 | 3.9 | 953.5 | 225.1 | 339.0 |
| Apr. [p] | 1,843.7 | 1,387.3 | 332.6 | 112.9 | 10.9 | 5,609.2 | 2,857.6 | 756.0 | 1,991.9 | 3.7 | 963.1 | 230.2 | 345.3 |
| | Transactions | | | | | | | | | | | | |
| 2012 | 72.2 | 99.4 | -33.2 | 10.0 | -4.0 | 222.8 | 99.4 | 35.6 | 100.2 | -12.5 | 16.5 | 15.0 | 25.0 |
| 2013 | 97.9 | 90.4 | -6.0 | 7.7 | 5.8 | 108.7 | 183.7 | -100.1 | 31.1 | -6.0 | -17.4 | -14.2 | -8.5 |
| 2014 | 68.0 | 89.9 | -25.6 | 1.2 | 2.5 | 140.2 | 209.0 | -65.7 | -1.4 | -1.7 | 46.1 | 5.8 | 20.9 |
| 2014 Q2 | 14.8 | 18.7 | -4.3 | 0.3 | 0.2 | 41.4 | 40.4 | -4.9 | 7.1 | -1.2 | 20.5 | 4.6 | 0.9 |
| Q3 | 29.6 | 33.6 | -5.7 | 1.9 | -0.2 | 47.3 | 61.9 | -16.0 | 1.0 | 0.4 | -8.3 | -2.3 | 12.6 |
| Q4 | 6.4 | 15.9 | -12.2 | -1.4 | 4.0 | 25.9 | 67.5 | -33.1 | -6.6 | -2.0 | 56.0 | -8.7 | -5.8 |
| 2015 Q1 | 29.7 | 49.2 | -17.2 | 2.6 | -4.9 | 39.3 | 81.5 | -43.3 | -0.1 | 1.1 | 50.4 | 5.1 | 8.7 |
| 2014 Nov. | 25.8 | 22.9 | 2.8 | 0.5 | -0.4 | 20.9 | 30.7 | -9.2 | -0.7 | 0.1 | 12.4 | 0.3 | 2.4 |
| Dec. | -20.0 | -20.2 | -3.3 | -2.8 | 6.3 | 4.8 | 23.6 | -15.3 | -1.6 | -1.9 | 11.2 | -11.5 | -2.7 |
| 2015 Jan. | 27.2 | 39.7 | -4.2 | -0.1 | -8.3 | -3.5 | 25.3 | -20.6 | -9.3 | 1.0 | -11.0 | 9.0 | 13.5 |
| Feb. | 11.8 | 13.4 | -5.0 | 0.8 | 2.5 | 12.1 | 23.4 | -12.7 | 1.0 | 0.4 | 18.4 | -4.3 | 5.8 |
| Mar. | -9.2 | -3.9 | -8.0 | 1.8 | 0.9 | 30.7 | 32.8 | -9.9 | 8.2 | -0.4 | 43.0 | 0.4 | -10.7 |
| Apr. [p] | 0.9 | 9.6 | -6.7 | 2.0 | -3.9 | 12.6 | 16.9 | -5.2 | 1.2 | -0.3 | 14.0 | 5.4 | 6.4 |
| | Growth rates | | | | | | | | | | | | |
| 2012 | 4.7 | 9.8 | -7.5 | 13.2 | -25.2 | 4.4 | 4.4 | 3.8 | 5.4 | -54.2 | 2.1 | 7.8 | 9.1 |
| 2013 | 6.1 | 8.1 | -1.5 | 8.8 | 54.6 | 2.0 | 7.8 | -10.3 | 1.6 | -57.0 | -2.2 | -6.9 | -2.8 |
| 2014 | 3.9 | 7.5 | -6.3 | 1.3 | 14.5 | 2.6 | 8.2 | -7.5 | -0.1 | -37.2 | 5.5 | 3.2 | 7.0 |
| 2014 Q2 | 6.2 | 8.3 | -0.6 | 4.9 | 40.5 | 2.0 | 7.3 | -8.1 | 0.3 | -30.3 | -4.4 | 1.7 | -0.3 |
| Q3 | 6.0 | 8.6 | -2.1 | 3.4 | 47.4 | 2.2 | 7.3 | -7.0 | 0.1 | -20.8 | -0.9 | 2.3 | 3.3 |
| Q4 | 3.9 | 7.5 | -6.3 | 1.3 | 14.5 | 2.6 | 8.2 | -7.5 | -0.1 | -37.2 | 5.5 | 3.2 | 7.0 |
| 2015 Q1 | 4.6 | 9.5 | -10.0 | 3.5 | -5.7 | 2.8 | 9.7 | -11.2 | 0.1 | -31.0 | 14.6 | -0.7 | 5.2 |
| 2014 Nov. | 5.2 | 8.8 | -5.3 | 3.3 | 17.4 | 2.4 | 7.5 | -7.1 | 0.2 | -14.7 | 3.5 | 4.0 | 1.1 |
| Dec. | 3.9 | 7.5 | -6.3 | 1.3 | 14.5 | 2.6 | 8.2 | -7.5 | -0.1 | -37.2 | 5.5 | 3.2 | 7.0 |
| 2015 Jan. | 4.9 | 10.0 | -8.1 | 1.5 | -34.8 | 2.5 | 8.6 | -9.2 | -0.2 | -20.8 | 5.7 | 0.5 | 8.9 |
| Feb. | 4.8 | 9.9 | -8.9 | 1.4 | -21.9 | 2.5 | 8.9 | -10.3 | -0.2 | -25.5 | 7.9 | -0.9 | 8.0 |
| Mar. | 4.6 | 9.5 | -10.0 | 3.5 | -5.7 | 2.8 | 9.7 | -11.2 | 0.1 | -31.0 | 14.6 | -0.7 | 5.2 |
| Apr. [p] | 4.3 | 9.8 | -11.5 | 5.5 | -37.8 | 2.9 | 9.9 | -11.5 | 0.1 | -35.3 | 16.0 | 1.6 | 7.8 |

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.

## 5.3 Credit to euro area residents [1)]

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

| | Credit to general government | | | Credit to other euro area residents | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Loans | Debt securities | Total | Loans | | | | | | Debt securities | Equity and non-money market fund investment fund shares |
| | | | | | Total | | To non-financial corporations [3)] | To households [4)] | To financial corporations other than MFIs and ICPFs [3)] | To insurance corporations and pension funds | | |
| | | | | | | Adjusted for loan sales and securitisation [2)] | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| | Outstanding amounts | | | | | | | | | | | |
| 2012 | 3,410.8 | 1,169.3 | 2,241.5 | 13,069.5 | 10,860.0 | - | 4,544.6 | 5,242.3 | 984.3 | 89.0 | 1,435.9 | 773.6 |
| 2013 | 3,407.5 | 1,096.3 | 2,311.2 | 12,709.4 | 10,546.4 | - | 4,354.1 | 5,221.4 | 872.6 | 98.3 | 1,363.9 | 799.1 |
| 2014 | 3,608.0 | 1,131.4 | 2,476.6 | 12,564.8 | 10,513.1 | - | 4,279.7 | 5,200.6 | 904.7 | 128.1 | 1,276.6 | 775.1 |
| 2014 Q2 | 3,449.1 | 1,101.7 | 2,347.4 | 12,588.4 | 10,464.8 | - | 4,306.3 | 5,191.0 | 868.5 | 99.0 | 1,317.4 | 806.3 |
| Q3 | 3,508.9 | 1,102.2 | 2,406.7 | 12,561.8 | 10,444.8 | - | 4,288.1 | 5,194.6 | 858.8 | 103.3 | 1,307.0 | 810.1 |
| Q4 | 3,608.0 | 1,131.4 | 2,476.6 | 12,564.8 | 10,513.1 | - | 4,279.7 | 5,200.6 | 904.7 | 128.1 | 1,276.6 | 775.1 |
| 2015 Q1 | 3,672.8 | 1,153.2 | 2,519.6 | 12,679.5 | 10,615.8 | - | 4,310.2 | 5,234.8 | 936.1 | 134.6 | 1,275.5 | 788.3 |
| 2014 Nov. | 3,538.2 | 1,108.8 | 2,429.4 | 12,534.0 | 10,431.0 | - | 4,271.1 | 5,194.9 | 857.5 | 107.4 | 1,291.8 | 811.2 |
| Dec. | 3,608.0 | 1,131.4 | 2,476.6 | 12,564.8 | 10,513.1 | - | 4,279.7 | 5,200.6 | 904.7 | 128.1 | 1,276.6 | 775.1 |
| 2015 Jan. | 3,652.4 | 1,148.7 | 2,503.7 | 12,635.3 | 10,582.4 | - | 4,301.2 | 5,223.2 | 919.2 | 138.9 | 1,277.1 | 775.8 |
| Feb. | 3,637.8 | 1,146.5 | 2,491.3 | 12,652.6 | 10,590.7 | - | 4,313.1 | 5,222.2 | 918.4 | 137.1 | 1,271.2 | 790.6 |
| Mar. | 3,672.8 | 1,153.2 | 2,519.6 | 12,679.5 | 10,615.8 | - | 4,310.2 | 5,234.8 | 936.1 | 134.6 | 1,275.5 | 788.3 |
| Apr. [p)] | 3,698.7 | 1,151.8 | 2,546.9 | 12,654.5 | 10,607.8 | - | 4,302.1 | 5,234.7 | 934.0 | 137.1 | 1,264.3 | 782.4 |
| | Transactions | | | | | | | | | | | |
| 2012 | 185.0 | -4.0 | 189.0 | -100.6 | -69.1 | -13.4 | -107.6 | 26.0 | 14.5 | -2.0 | -69.9 | 38.5 |
| 2013 | -24.4 | -73.6 | 49.2 | -304.5 | -247.4 | -221.2 | -132.8 | -3.5 | -120.7 | 9.6 | -71.7 | 14.6 |
| 2014 | 72.6 | 16.3 | 56.3 | -103.7 | -50.9 | 18.7 | -59.8 | -13.7 | 11.1 | 11.6 | -88.1 | 35.3 |
| 2014 Q2 | -27.2 | -10.3 | -16.9 | -50.1 | -47.4 | 9.2 | -18.7 | -35.4 | 8.5 | -1.7 | -12.5 | 9.7 |
| Q3 | 40.4 | -1.4 | 41.8 | -18.9 | -10.6 | -10.8 | -18.6 | 8.2 | -4.4 | 4.2 | -14.1 | 5.7 |
| Q4 | 46.5 | 12.8 | 33.7 | 5.5 | 23.3 | 33.8 | 3.4 | 6.4 | 6.8 | 6.6 | -34.7 | 17.0 |
| 2015 Q1 | 38.5 | 21.6 | 16.9 | 35.8 | 45.1 | 52.3 | 8.7 | 19.7 | 10.7 | 6.0 | -1.8 | -7.5 |
| 2014 Nov. | 4.6 | 11.2 | -6.6 | -13.9 | 2.8 | 10.3 | -3.9 | -1.3 | 3.5 | 4.5 | -10.7 | -5.9 |
| Dec. | 23.2 | 8.0 | 15.3 | 24.7 | 24.2 | 25.0 | 10.0 | 3.3 | 8.4 | 2.5 | -17.0 | 17.5 |
| 2015 Jan. | 32.2 | 13.5 | 18.7 | 9.8 | 16.3 | 16.9 | 1.7 | 5.6 | -1.5 | 10.5 | 2.3 | -8.8 |
| Feb. | -20.6 | 2.7 | -23.3 | 9.0 | 8.1 | 15.3 | 10.2 | 1.3 | -1.5 | -1.9 | -7.1 | 8.0 |
| Mar. | 26.9 | 5.4 | 21.6 | 17.0 | 20.7 | 20.2 | -3.2 | 12.8 | 13.7 | -2.6 | 3.1 | -6.8 |
| Apr. [p)] | 36.7 | -1.2 | 37.9 | -6.3 | 8.9 | 18.9 | 0.2 | 4.4 | 1.7 | 2.6 | -9.5 | -5.8 |
| | Growth rates | | | | | | | | | | | |
| 2012 | 5.8 | -0.3 | 9.5 | -0.8 | -0.6 | -0.1 | -2.3 | 0.5 | 1.5 | -2.2 | -4.6 | 5.2 |
| 2013 | -0.7 | -6.3 | 2.2 | -2.3 | -2.3 | -2.0 | -2.9 | -0.1 | -12.2 | 10.8 | -5.0 | 1.9 |
| 2014 | 2.1 | 1.5 | 2.4 | -0.8 | -0.5 | 0.2 | -1.4 | -0.3 | 1.1 | 11.8 | -6.5 | 4.4 |
| 2014 Q2 | -2.5 | -1.5 | -3.0 | -2.2 | -1.8 | -1.1 | -2.3 | -0.6 | -5.9 | 4.8 | -7.5 | 0.5 |
| Q3 | -0.5 | -0.7 | -0.4 | -1.9 | -1.2 | -0.6 | -2.0 | -0.5 | -2.5 | 8.5 | -8.6 | 1.8 |
| Q4 | 2.1 | 1.5 | 2.4 | -0.8 | -0.5 | 0.2 | -1.4 | -0.3 | 1.1 | 11.8 | -6.5 | 4.4 |
| 2015 Q1 | 2.8 | 2.0 | 3.2 | -0.2 | 0.1 | 0.8 | -0.6 | 0.0 | 2.2 | 14.1 | -4.7 | 3.0 |
| 2014 Nov. | 0.8 | 0.6 | 0.9 | -1.4 | -0.9 | -0.2 | -1.7 | -0.4 | -1.0 | 8.0 | -7.2 | 2.6 |
| Dec. | 2.1 | 1.5 | 2.4 | -0.8 | -0.5 | 0.2 | -1.4 | -0.3 | 1.1 | 11.8 | -6.5 | 4.4 |
| 2015 Jan. | 2.3 | 1.6 | 2.6 | -0.6 | -0.2 | 0.5 | -1.1 | -0.1 | 1.4 | 19.3 | -6.3 | 3.3 |
| Feb. | 1.9 | 1.5 | 2.0 | -0.4 | -0.1 | 0.6 | -0.6 | -0.2 | 0.5 | 15.4 | -5.6 | 4.2 |
| Mar. | 2.8 | 2.0 | 3.2 | -0.2 | 0.1 | 0.8 | -0.6 | 0.0 | 2.2 | 14.1 | -4.7 | 3.0 |
| Apr. [p)] | 3.8 | 2.4 | 4.5 | 0.0 | 0.0 | 0.8 | -0.4 | 0.0 | 0.3 | 17.2 | -2.2 | 2.8 |

Source: ECB.

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

2) Adjusted for the derecognition of loans on the MFI balance sheet on account of their sale or securitisation.

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.

## 5.4 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 for loan sales and securitisation [4)] | | | | | Adjusted for loan sales and securitisation [4)] | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | Outstanding amounts | | | | | | | | | |
| 2012 | 4,544.6 | - | 1,127.9 | 795.6 | 2,621.0 | 5,242.3 | - | 602.0 | 3,823.6 | 816.7 |
| 2013 | 4,354.1 | - | 1,065.6 | 740.8 | 2,547.8 | 5,221.4 | - | 573.5 | 3,851.5 | 796.4 |
| 2014 | 4,279.7 | - | 1,081.0 | 724.6 | 2,474.2 | 5,200.6 | - | 563.2 | 3,861.3 | 776.1 |
| 2014 Q2 | 4,306.3 | - | 1,058.1 | 734.1 | 2,514.1 | 5,191.0 | - | 570.3 | 3,832.2 | 788.5 |
| Q3 | 4,288.1 | - | 1,056.5 | 726.1 | 2,505.4 | 5,194.6 | - | 567.1 | 3,843.7 | 783.8 |
| Q4 | 4,279.7 | - | 1,081.0 | 724.6 | 2,474.2 | 5,200.6 | - | 563.2 | 3,861.3 | 776.1 |
| 2015 Q1 | 4,310.2 | - | 1,089.9 | 738.9 | 2,481.5 | 5,234.8 | - | 567.9 | 3,891.7 | 775.3 |
| 2014 Nov. | 4,271.1 | - | 1,040.0 | 734.0 | 2,497.0 | 5,194.9 | - | 566.6 | 3,848.3 | 780.0 |
| Dec. | 4,279.7 | - | 1,081.0 | 724.6 | 2,474.2 | 5,200.6 | - | 563.2 | 3,861.3 | 776.1 |
| 2015 Jan. | 4,301.2 | - | 1,087.4 | 735.5 | 2,478.3 | 5,223.2 | - | 566.2 | 3,879.7 | 777.3 |
| Feb. | 4,313.1 | - | 1,090.4 | 734.8 | 2,487.9 | 5,222.2 | - | 565.3 | 3,883.4 | 773.6 |
| Mar. | 4,310.2 | - | 1,089.9 | 738.9 | 2,481.5 | 5,234.8 | - | 567.9 | 3,891.7 | 775.3 |
| Apr. [p)] | 4,302.1 | - | 1,089.9 | 737.1 | 2,475.0 | 5,234.7 | - | 566.7 | 3,894.8 | 773.2 |
| | Transactions | | | | | | | | | |
| 2012 | -107.6 | -60.3 | 6.2 | -51.4 | -62.3 | 26.0 | 34.7 | -17.7 | 48.8 | -5.1 |
| 2013 | -132.8 | -127.5 | -44.5 | -44.5 | -43.7 | -3.5 | 14.3 | -18.1 | 27.6 | -13.1 |
| 2014 | -59.8 | -46.6 | -13.8 | 0.7 | -46.8 | -13.7 | 42.3 | -3.0 | -2.0 | -8.7 |
| 2014 Q2 | -18.7 | -7.5 | 3.3 | 6.0 | -28.1 | -35.4 | 9.3 | -2.0 | -33.1 | -0.3 |
| Q3 | -18.6 | -20.1 | -3.1 | -7.0 | -8.5 | 8.2 | 9.5 | 1.2 | 13.1 | -6.1 |
| Q4 | 3.4 | 5.8 | -7.4 | 8.1 | 2.7 | 6.4 | 14.9 | -2.2 | 10.6 | -1.9 |
| 2015 Q1 | 8.7 | 11.7 | -0.4 | 8.1 | 1.0 | 19.7 | 23.9 | 2.5 | 17.5 | -0.3 |
| 2014 Nov. | -3.9 | -2.5 | -12.6 | 10.7 | -2.0 | -1.3 | 4.8 | -1.6 | 0.0 | 0.3 |
| Dec. | 10.0 | 10.4 | 7.0 | -1.7 | 4.7 | 3.3 | 4.2 | -2.5 | 6.5 | -0.7 |
| 2015 Jan. | 1.7 | 1.6 | -1.7 | 5.3 | -1.9 | 5.6 | 6.2 | 0.1 | 6.3 | -0.7 |
| Feb. | 10.2 | 12.3 | 3.1 | -1.1 | 8.1 | 1.3 | 6.3 | -0.6 | 3.8 | -1.8 |
| Mar. | -3.2 | -2.2 | -1.8 | 3.8 | -5.3 | 12.8 | 11.5 | 3.0 | 7.5 | 2.3 |
| Apr. [p)] | 0.2 | 1.6 | 3.3 | -0.4 | -2.7 | 4.4 | 13.0 | -1.0 | 6.3 | -0.9 |
| | Growth rates | | | | | | | | | |
| 2012 | -2.3 | -1.3 | 0.5 | -6.0 | -2.3 | 0.5 | 0.7 | -2.8 | 1.3 | -0.6 |
| 2013 | -2.9 | -2.8 | -4.0 | -5.6 | -1.7 | -0.1 | 0.3 | -3.0 | 0.7 | -1.6 |
| 2014 | -1.4 | -1.1 | -1.3 | 0.1 | -1.8 | -0.3 | 0.8 | -0.5 | -0.1 | -1.1 |
| 2014 Q2 | -2.3 | -2.1 | -2.7 | -3.3 | -1.9 | -0.6 | 0.5 | -1.4 | -0.4 | -1.0 |
| Q3 | -2.0 | -1.8 | -1.4 | -3.4 | -1.9 | -0.5 | 0.5 | -1.1 | -0.2 | -1.7 |
| Q4 | -1.4 | -1.1 | -1.3 | 0.1 | -1.8 | -0.3 | 0.8 | -0.5 | -0.1 | -1.1 |
| 2015 Q1 | -0.6 | -0.2 | -0.7 | 2.1 | -1.3 | 0.0 | 1.1 | -0.1 | 0.2 | -1.1 |
| 2014 Nov. | -1.7 | -1.4 | -1.5 | -1.8 | -1.7 | -0.4 | 0.7 | 0.1 | -0.2 | -1.3 |
| Dec. | -1.4 | -1.1 | -1.3 | 0.1 | -1.8 | -0.3 | 0.8 | -0.5 | -0.1 | -1.1 |
| 2015 Jan. | -1.1 | -0.8 | -0.8 | 1.1 | -1.9 | -0.1 | 0.9 | -0.4 | 0.1 | -1.0 |
| Feb. | -0.6 | -0.3 | 0.5 | 0.8 | -1.5 | -0.2 | 1.0 | -0.5 | 0.0 | -1.1 |
| Mar. | -0.6 | -0.2 | -0.7 | 2.1 | -1.3 | 0.0 | 1.1 | -0.1 | 0.2 | -1.1 |
| Apr. [p)] | -0.4 | -0.1 | 0.3 | 1.2 | -1.2 | 0.0 | 1.3 | -0.1 | 0.1 | -0.8 |

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 the derecognition of loans on the MFI balance sheet on account of their sale or securitisation.

## 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 | | | | | | | | | |
| 2012 | 305.4 | 7,570.1 | 2,395.9 | 106.0 | 2,680.8 | 2,387.4 | 1,029.8 | 146.4 | 260.8 | 201.2 |
| 2013 | 260.2 | 7,305.0 | 2,373.3 | 91.5 | 2,506.3 | 2,333.9 | 1,153.9 | 124.5 | 183.8 | 122.1 |
| 2014 | 262.1 | 7,178.7 | 2,253.2 | 92.0 | 2,375.3 | 2,458.3 | 1,390.7 | 183.9 | 184.5 | 139.8 |
| 2014 Q2 | 270.3 | 7,295.3 | 2,301.8 | 90.1 | 2,455.1 | 2,448.4 | 1,346.1 | 147.7 | 171.3 | 119.0 |
| Q3 | 249.7 | 7,332.4 | 2,278.6 | 92.4 | 2,457.0 | 2,504.3 | 1,419.5 | 179.8 | 163.6 | 121.7 |
| Q4 | 262.1 | 7,178.7 | 2,253.2 | 92.0 | 2,375.3 | 2,458.3 | 1,390.7 | 183.9 | 184.5 | 139.8 |
| 2015 Q1 | 287.6 | 7,322.2 | 2,259.8 | 90.5 | 2,394.7 | 2,577.1 | 1,504.3 | 237.2 | 234.7 | 159.1 |
| 2014 Nov. | 258.7 | 7,263.2 | 2,258.3 | 91.0 | 2,404.7 | 2,509.2 | 1,466.5 | 189.8 | 184.4 | 130.8 |
| Dec. | 262.1 | 7,178.7 | 2,253.2 | 92.0 | 2,375.3 | 2,458.3 | 1,390.7 | 183.9 | 184.5 | 139.8 |
| 2015 Jan. | 306.0 | 7,293.1 | 2,245.5 | 92.8 | 2,402.6 | 2,552.2 | 1,481.6 | 233.7 | 203.3 | 133.3 |
| Feb. | 262.9 | 7,303.0 | 2,263.4 | 91.6 | 2,396.3 | 2,551.7 | 1,447.7 | 265.0 | 226.3 | 144.5 |
| Mar. | 287.6 | 7,322.2 | 2,259.8 | 90.5 | 2,394.7 | 2,577.1 | 1,504.3 | 237.2 | 234.7 | 159.1 |
| Apr. [p)] | 260.2 | 7,235.3 | 2,237.3 | 88.5 | 2,354.6 | 2,554.9 | 1,447.8 | 241.1 | 206.3 | 132.1 |
| | Transactions | | | | | | | | | |
| 2012 | -4.9 | -115.3 | -156.3 | -10.2 | -106.4 | 157.6 | 99.4 | 28.8 | 9.4 | 41.5 |
| 2013 | -46.0 | -88.8 | -18.6 | -14.3 | -137.6 | 81.6 | 359.2 | -64.7 | 32.2 | 43.9 |
| 2014 | -6.9 | -161.8 | -119.7 | 1.8 | -154.7 | 110.8 | 244.2 | -19.0 | 0.7 | 17.7 |
| 2014 Q2 | 9.4 | -65.1 | -54.7 | -1.0 | -15.8 | 6.5 | 75.0 | 23.8 | -5.8 | 2.3 |
| Q3 | -20.9 | -3.1 | -28.3 | 2.3 | -28.5 | 51.5 | 38.4 | 25.3 | -7.7 | 2.6 |
| Q4 | 4.4 | -95.3 | -25.1 | 1.0 | -77.3 | 6.1 | 35.9 | -55.5 | 20.9 | 18.1 |
| 2015 Q1 | 22.2 | -47.4 | -30.7 | -2.5 | -47.5 | 33.3 | -6.3 | 53.8 | 50.1 | 19.3 |
| 2014 Nov. | 1.7 | -19.5 | -6.4 | -0.8 | -13.6 | 1.3 | 47.9 | 19.0 | 1.3 | 9.6 |
| Dec. | 0.4 | -43.9 | -6.2 | 2.4 | -34.1 | -6.1 | -26.1 | -60.7 | 0.1 | 9.0 |
| 2015 Jan. | 40.6 | -12.0 | -16.1 | -0.2 | -12.7 | 17.1 | -5.9 | 46.2 | 18.8 | -6.5 |
| Feb. | -43.1 | -17.9 | -8.5 | -1.2 | -12.0 | 3.7 | -24.8 | 33.1 | 23.0 | 11.3 |
| Mar. | 24.7 | -17.5 | -6.1 | -1.1 | -22.8 | 12.5 | 24.4 | -25.5 | 8.3 | 14.6 |
| Apr. [p)] | -27.4 | -38.8 | -20.1 | -2.0 | -19.9 | 3.1 | -26.8 | 4.3 | -28.3 | -27.0 |
| | Growth rates | | | | | | | | | |
| 2012 | -1.5 | -1.5 | -6.1 | -8.8 | -3.8 | 7.0 | - | - | 2.5 | 26.1 |
| 2013 | -15.1 | -1.2 | -0.8 | -13.5 | -5.1 | 3.5 | - | - | 10.3 | 23.5 |
| 2014 | -2.7 | -2.2 | -5.1 | 2.0 | -6.1 | 4.7 | - | - | 0.4 | 14.5 |
| 2014 Q2 | -9.0 | -1.6 | -3.9 | -6.8 | -3.2 | 2.6 | - | - | -23.8 | -4.5 |
| Q3 | -11.5 | -1.1 | -4.7 | -1.2 | -2.7 | 4.2 | - | - | -17.5 | -3.2 |
| Q4 | -2.7 | -2.2 | -5.1 | 2.0 | -6.1 | 4.7 | - | - | 0.4 | 14.5 |
| 2015 Q1 | 5.6 | -2.9 | -5.9 | -0.3 | -6.8 | 4.0 | - | - | 32.5 | 36.3 |
| 2014 Nov. | -1.9 | -1.9 | -5.5 | -1.1 | -4.8 | 4.9 | - | - | -4.4 | -6.6 |
| Dec. | -2.7 | -2.2 | -5.1 | 2.0 | -6.1 | 4.7 | - | - | 0.4 | 14.5 |
| 2015 Jan. | 22.3 | -2.3 | -5.6 | 2.5 | -6.0 | 4.6 | - | - | 22.4 | 28.3 |
| Feb. | -4.4 | -2.4 | -5.7 | 0.8 | -5.9 | 4.3 | - | - | 27.0 | 28.4 |
| Mar. | 5.6 | -2.9 | -5.9 | -0.3 | -6.8 | 4.0 | - | - | 32.5 | 36.3 |
| Apr. [p)] | -5.7 | -3.1 | -5.5 | -2.4 | -7.4 | 3.4 | - | - | 26.8 | 33.0 |

Source: ECB.

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

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

3) Not adjusted for seasonal effects.

# 6 FISCAL DEVELOPMENTS

## 6.1 Deficit/surplus, revenue and expenditure [1)2)]

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

| | Deficit (-)/ surplus (+) | Revenue | | | | | | Expenditure | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total | Current revenue | | | | Capital revenue | Total | Current expenditure | | | | | Capital expenditure |
| | | | | Direct taxes | Indirect taxes | Net social contributions | | | | Compensation of employees | Intermediate consumption | Interest | Social payments [3)] | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 2011 | -3.9 | 44.7 | 44.5 | 11.7 | 12.7 | 15.1 | 0.2 | 48.6 | 44.3 | 10.4 | 5.3 | 3.0 | 23.0 | 4.3 |
| 2012 | -3.4 | 45.8 | 45.6 | 12.2 | 13.0 | 15.3 | 0.2 | 49.1 | 44.6 | 10.4 | 5.3 | 3.0 | 23.5 | 4.5 |
| 2013 | -2.5 | 46.4 | 46.1 | 12.5 | 13.1 | 15.5 | 0.3 | 48.9 | 44.8 | 10.4 | 5.3 | 2.8 | 23.8 | 4.1 |
| 2014 | -2.1 | 46.5 | 46.3 | 12.5 | 13.3 | 15.5 | 0.3 | 48.7 | 44.9 | 10.3 | 5.3 | 2.6 | 24.0 | 3.8 |
| 2014 Q3 | -2.4 | 46.6 | 46.1 | 12.5 | 13.1 | 15.5 | 0.5 | 49.0 | 45.3 | 10.3 | 5.3 | 2.7 | 23.0 | 3.7 |
| Q4 | -2.4 | 46.6 | 46.2 | 12.5 | 13.1 | 15.5 | 0.5 | 49.1 | 45.3 | 10.3 | 5.3 | 2.6 | 23.1 | 3.7 |

## 6.2 Government debt-to-GDP ratio [1)]

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

| | Total | Financial instrument | | | Holder | | | Original maturity | | Residual maturity | | | Currency | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Currency and deposits | Loans | Debt securities | Resident creditors | | Non-resident creditors | Up to 1 year | Over 1 year | Up to 1 year | Over 1 and up to 5 years | Over 5 years | Euro or participating currencies | Other currencies |
| | | | | | | MFIs | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 2011 | 85.8 | 2.9 | 15.3 | 67.5 | 42.7 | 24.3 | 43.1 | 12.2 | 73.6 | 20.3 | 29.8 | 35.7 | 84.0 | 1.8 |
| 2012 | 89.1 | 3.0 | 17.2 | 68.8 | 45.4 | 26.2 | 43.6 | 11.4 | 77.7 | 19.5 | 31.6 | 38.0 | 86.9 | 2.2 |
| 2013 | 90.9 | 2.7 | 17.0 | 71.2 | 45.9 | 26.1 | 45.0 | 10.4 | 80.5 | 19.4 | 32.2 | 39.3 | 89.0 | 2.0 |
| 2014 | 92.0 | 2.7 | 16.8 | 72.4 | 45.2 | 25.9 | 46.8 | 10.1 | 81.8 | 19.2 | 32.2 | 40.5 | 89.9 | 2.0 |
| 2014 Q3 | 92.0 | 2.6 | 16.6 | 72.8 | . | . | . | . | . | . | . | . | . | . |
| Q4 | 91.9 | 2.7 | 16.8 | 72.4 | . | . | . | . | . | . | . | . | . | . |

## 6.3 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 [4)] | Primary deficit (+)/ surplus (-) | Deficit-debt adjustment [5)] | | | | | | | | 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 |
| 2011 | 2.1 | 1.2 | 0.1 | -0.3 | 0.2 | -0.2 | -0.2 | -0.1 | 0.4 | 0.1 | 0.8 | 3.9 |
| 2012 | 3.3 | 0.6 | 0.1 | 1.1 | 0.3 | 0.3 | -0.1 | 0.5 | -1.3 | 0.3 | 2.7 | 5.0 |
| 2013 | 1.8 | 0.1 | -0.2 | -0.6 | -0.4 | -0.4 | -0.1 | 0.3 | 0.0 | 0.4 | 2.0 | 2.7 |
| 2014 | 1.1 | -0.2 | 0.2 | 0.0 | 0.2 | -0.1 | -0.2 | 0.1 | -0.1 | 0.2 | 1.1 | 2.7 |
| 2014 Q3 | 0.9 | -0.3 | 0.0 | 0.0 | 0.0 | 0.0 | -0.2 | 0.2 | -0.4 | 0.4 | 1.1 | 2.7 |
| Q4 | 1.0 | -0.2 | 0.2 | 0.1 | 0.2 | 0.0 | -0.2 | 0.1 | -0.1 | 0.2 | 1.0 | 2.7 |

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

1) Data refer to the Euro 19. Quarterly ratios (as a percentage of GDP) calculated using a four-quarter cumulated sum for flow data and GDP, and the end-of-quarter value for outstanding amounts.
2) EU budget transactions are included and consolidated in annual data.
3) Current transfers to non-profit institutions serving households are included in annual data.
4) Calculated as the difference between the government debt-to-GDP ratios in the last and an earlier period, i.e. the previous year for annual data and the same quarter a year earlier for quarterly data.
5) Quarterly data include intergovernmental lending within the context of the financial crisis.

## 6.4 Government debt securities [1]

*(debt service as a percentage of GDP; average residual maturity in years; average nominal yields in percentages per annum)*

| | Debt service due within 1 year [2] | | | | | Average residual maturity [3] | Average nominal yields [4] | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Principal [5] | | 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 |
| 2013 | 16.5 | 14.4 | 5.0 | 2.1 | 0.5 | 6.3 | 3.5 | 1.7 | 1.3 | 3.7 | 2.8 | 1.2 | 1.8 |
| 2014 | 15.9 | 13.9 | 5.1 | 2.0 | 0.5 | 6.4 | 3.1 | 1.5 | 0.5 | 3.5 | 2.7 | 0.8 | 1.6 |
| 2014 Q3 | 17.3 | 15.2 | 5.7 | 2.1 | 0.5 | 6.4 | 3.2 | 1.5 | 0.5 | 3.5 | 2.8 | 0.9 | 1.6 |
| Q4 | 15.9 | 13.9 | 5.1 | 2.0 | 0.5 | 6.4 | 3.1 | 1.5 | 0.5 | 3.5 | 2.7 | 0.8 | 1.6 |
| 2014 Nov. | 15.9 | 13.9 | 4.8 | 2.0 | 0.5 | 6.5 | 3.1 | 1.5 | 0.5 | 3.5 | 2.7 | 0.9 | 1.7 |
| Dec. | 15.9 | 13.9 | 5.1 | 2.0 | 0.5 | 6.4 | 3.1 | 1.5 | 0.5 | 3.5 | 2.7 | 0.8 | 1.6 |
| 2015 Jan. | 15.7 | 13.6 | 5.1 | 2.0 | 0.5 | 6.5 | 3.1 | 1.4 | 0.4 | 3.5 | 2.7 | 0.8 | 1.7 |
| Feb. | 15.7 | 13.6 | 4.5 | 2.0 | 0.5 | 6.5 | 3.0 | 1.4 | 0.3 | 3.4 | 2.7 | 0.7 | 1.7 |
| Mar. | 15.5 | 13.4 | 4.6 | 2.0 | 0.5 | 6.5 | 3.0 | 1.4 | 0.0 | 3.4 | 2.8 | 0.6 | 1.7 |
| Apr. | 15.9 | 13.8 | 4.8 | 2.0 | 0.5 | 6.6 | 2.9 | 1.3 | 0.3 | 3.4 | 2.8 | 0.5 | 1.7 |

## 6.5 Fiscal developments in euro area countries [6]

*(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 (+) | | | | | | | | |
| 2011 | -4.1 | -0.9 | 1.2 | -12.7 | -10.2 | -9.4 | -5.1 | -3.5 | -5.8 |
| 2012 | -4.1 | 0.1 | -0.2 | -8.1 | -8.7 | -10.3 | -4.8 | -3.0 | -5.8 |
| 2013 | -2.9 | 0.1 | -0.2 | -5.8 | -12.3 | -6.8 | -4.1 | -2.9 | -4.9 |
| 2014 | -3.2 | 0.7 | 0.6 | -4.1 | -3.5 | -5.8 | -4.0 | -3.0 | -8.8 |
| 2014 Q3 | -3.1 | 0.6 | -0.2 | -4.7 | -2.3 | -5.7 | -4.0 | -2.8 | -10.2 |
| Q4 | -3.2 | 0.7 | 0.6 | -4.1 | -3.5 | -5.8 | -4.0 | -3.0 | -8.8 |
| | Government debt | | | | | | | | |
| 2011 | 102.0 | 77.9 | 6.0 | 111.2 | 171.3 | 69.2 | 85.2 | 116.4 | 66.0 |
| 2012 | 103.8 | 79.3 | 9.7 | 121.7 | 156.9 | 84.4 | 89.6 | 123.1 | 79.5 |
| 2013 | 104.4 | 77.1 | 10.1 | 123.2 | 175.0 | 92.1 | 92.3 | 128.5 | 102.2 |
| 2014 | 106.5 | 74.7 | 10.6 | 109.7 | 177.1 | 97.7 | 95.0 | 132.1 | 107.5 |
| 2014 Q3 | 108.3 | 75.1 | 10.5 | 114.3 | 175.8 | 96.8 | 95.4 | 132.0 | 104.7 |
| Q4 | 106.6 | 74.7 | 10.6 | 109.7 | 177.1 | 97.7 | 95.2 | 132.1 | 107.5 |

| | Latvia | Lithuania | Luxembourg | Malta | Netherlands | Austria | Portugal | Slovenia | Slovakia | Finland |
|---|---|---|---|---|---|---|---|---|---|---|
| | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| | Government deficit (-)/surplus (+) | | | | | | | | | |
| 2011 | -3.3 | -8.9 | 0.4 | -2.6 | -4.3 | -2.6 | -7.4 | -6.6 | -4.1 | -1.0 |
| 2012 | -0.8 | -3.1 | 0.1 | -3.6 | -4.0 | -2.2 | -5.6 | -4.0 | -4.2 | -2.1 |
| 2013 | -0.7 | -2.6 | 0.9 | -2.6 | -2.3 | -1.3 | -4.8 | -14.9 | -2.6 | -2.5 |
| 2014 | -1.4 | -0.7 | 0.6 | -2.1 | -2.3 | -2.4 | -4.5 | -4.9 | -2.9 | -3.2 |
| 2014 Q3 | 0.0 | -0.7 | 0.5 | -2.7 | -2.6 | -1.2 | -4.4 | -12.8 | -2.8 | -2.9 |
| Q4 | -1.4 | -0.7 | . | -2.1 | -2.3 | -2.4 | -4.5 | -4.9 | -2.9 | -3.2 |
| | Government debt | | | | | | | | | |
| 2011 | 42.7 | 37.2 | 19.1 | 69.7 | 61.3 | 82.1 | 111.1 | 46.5 | 43.4 | 48.5 |
| 2012 | 40.9 | 39.8 | 21.9 | 67.4 | 66.5 | 81.5 | 125.8 | 53.7 | 52.1 | 52.9 |
| 2013 | 38.2 | 38.8 | 24.0 | 69.2 | 68.6 | 80.9 | 129.7 | 70.3 | 54.6 | 55.8 |
| 2014 | 40.0 | 40.9 | 23.6 | 68.0 | 68.8 | 84.5 | 130.2 | 80.9 | 53.6 | 59.3 |
| 2014 Q3 | 40.4 | 38.1 | 23.3 | 71.7 | 69.0 | 80.8 | 132.2 | 77.7 | 55.4 | 58.2 |
| Q4 | 40.0 | 40.9 | . | 68.0 | 68.8 | 84.5 | 130.2 | 80.9 | 53.6 | 59.3 |

Sources: ECB for government debt securities; Eurostat for government deficit/surplus and government debt.

1) Data on government debt securities are recorded at face value and not consolidated within the general government sector.
2) Flows of principal and interest during the debt service period.
3) Residual maturity at the end of the period.
4) Outstanding amounts at the end of the period; transactions as 12-month average.
5) Principal amounts do not cover short-term securities issued and redeemed within the next 12 months.
6) Quarterly ratios (as a percentage of GDP) calculated using a four-quarter cumulated sum for flow data and GDP, and at the end-of-quarter value for outstanding amounts.