EUROPEAN CENTRAL BANK
EUROSYSTEM

June 2018
Eurosystem staff macroeconomic projections for the euro area[1]

Following a weaker than expected start to the year, the economic expansion in the euro area is nevertheless projected to remain solid and to continue at a pace above potential. As in previous projection exercises, real GDP growth is projected to slow gradually over the projection horizon, from 2.1% in 2018 to 1.7% in 2020[2], as some tailwinds slowly fade away. HICP inflation is expected to stand at 1.7% in each year of the projection period, albeit with some volatility in its quarterly profile. The stable path of the average annual inflation rate conceals a decline in the annual rate of the energy component, which is offset by gradually rising HICP inflation excluding energy and food as capacity constraints become increasingly binding.

1 Real economy

The slowdown in real GDP growth in the first quarter of 2018 partly reflected temporary factors but also implies that the slowdown has come earlier than previously expected. Following four consecutive quarters of strong growth at 0.7% in 2017, real GDP growth moderated to 0.4% in the first quarter of 2018. This slowdown is partly explained by a number of temporary factors, including bad weather conditions, strikes in some euro area countries and an unusually high level of sick leave in the context of a seasonal flu outbreak in Germany. In addition, the adverse impact of the past appreciation of the euro may have been stronger than expected and labour supply constraints may have become binding sooner than envisaged. Finally, the slowdown may also reflect a pull-back from the very strong pace of growth observed throughout 2017.

Looking ahead, however, real GDP growth is projected to remain solid over the next few quarters, in line with still elevated levels of business and consumer sentiment. Following a marked decline during the first quarter of 2018, business and consumer confidence stabilised in April and May, remaining at high levels by

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1 These macroeconomic projections produced by Eurosystem staff are an input to the Governing Council's assessment of economic developments and the risks to price stability. The projections produced by ECB or Eurosystem staff are neither endorsed by the Governing Council nor do they necessarily reflect the views of the Governing Council on the outlook for the euro area. Information on the procedures and techniques used is given in *A guide to the Eurosystem/ECB staff macroeconomic projection exercises*, ECB, July 2016, which is available on the ECB's website. The cut-off date for technical assumptions, such as for oil prices and exchange rates, was 22 May 2018 (see Box 1). The cut-off date for including other information in this exercise was 31 May 2018.
The current macroeconomic projection exercise covers the period 2018-20. Projections over such a long horizon are subject to very high uncertainty, and this should be borne in mind when interpreting them. See the article entitled "An assessment of Eurosystem staff macroeconomic projections" in the May 2013 issue of the ECB's Monthly Bulletin.
See http://www.ecb.europa.eu/pub/projections/html/index.en.html for an accessible version of the data underlying selected tables and charts.

2 The figures refer to working day-adjusted data.

historical standards. While certain indicators released after the cut-off date have been slightly weaker than expected, they are still broadly in line with the projected growth path.

Table 1

Macroeconomic projections for the euro area[1)]

(annual percentage changes)

	June 2018				March 2018			
	2017	2018	2019	2020	2017	2018	2019	2020
Real GDP	2.5	2.1	1.9	1.7	2.5	2.4	1.9	1.7
		[1.8 - 2.4][2)]	[0.9 - 2.9][2)]	[0.6 - 2.8][2)]		[2.1 - 2.7][2)]	[0.9 - 2.9][2)]	[0.7 - 2.7][2)]
Private consumption	1.7	1.6	1.7	1.5	1.9	1.7	1.7	1.5
Government consumption	1.2	1.3	1.3	1.2	1.2	1.2	1.2	1.1
Gross fixed capital formation	3.3	4.2	3.3	2.8	3.7	4.4	3.4	2.8
Exports[3)]	5.4	4.2	4.4	3.8	5.2	5.3	4.1	3.8
Imports[3)]	4.6	4.1	4.7	4.0	4.6	5.1	4.5	4.0
Employment	1.6	1.4	1.1	0.8	1.7	1.4	1.1	0.8
Unemployment rate (percentage of labour force)	9.1	8.4	7.8	7.3	9.1	8.3	7.7	7.2
HICP	1.5	1.7	1.7	1.7	1.5	1.4	1.4	1.7
		[1.6 - 1.8][2)]	[1.0 - 2.4][2)]	[0.9 - 2.5][2)]		[1.1 - 1.7][2)]	[0.6 - 2.2][2)]	[0.8 - 2.6][2)]
HICP excluding energy	1.2	1.3	1.7	1.9	1.2	1.2	1.6	1.9
HICP excluding energy and food	1.0	1.1	1.6	1.9	1.0	1.1	1.5	1.8
HICP excluding energy, food and changes in indirect taxes[4)]	1.0	1.1	1.5	1.9	1.0	1.1	1.5	1.8
Unit labour costs	0.7	1.5	1.2	1.8	0.8	1.1	1.2	1.8
Compensation per employee	1.6	2.3	2.1	2.7	1.6	2.2	2.0	2.7
Labour productivity	0.9	0.7	0.9	0.9	0.8	1.0	0.8	0.9
General government budget balance (percentage of GDP)	-0.9	-0.7	-0.8	-0.5	-1.0	-0.7	-0.6	-0.3
Structural budget balance (percentage of GDP)[5)]	-0.9	-0.9	-1.0	-0.9	-1.0	-1.0	-0.9	-0.9
General government gross debt (percentage of GDP)	86.7	84.8	82.7	80.4	86.7	84.4	82.1	79.7
Current account balance (percentage of GDP)	3.5	2.9	2.5	2.5	3.7	4.2	4.3	4.5

1) Real GDP and components refer to working day-adjusted data. The Eurostat release on 7 June 2018 for GDP and its main components (published after the cut-off date) indicates a working day-adjusted real GDP growth rate of 2.6% in 2017.
2) The ranges shown around the projections are based on the differences between actual outcomes and previous projections carried out over a number of years. The width of the ranges is twice the average absolute value of these differences. The method used for calculating the ranges, involving a correction for exceptional events, is documented in *New procedure for constructing Eurosystem and ECB staff projection ranges*, ECB, December 2009, available on the ECB's website.
3) Including intra-euro area trade.
4) The sub-index is based on estimates of actual impacts of indirect taxes. This may differ from Eurostat data, which assume a full and immediate pass-through of tax impacts to the HICP.
5) Calculated as the government balance net of transitory effects of the economic cycle and temporary measures taken by governments (for the ESCB approach, see *Working Paper Series*, No 77, ECB, September 2001, and *Working Paper Series*, No 579, ECB, January 2007). The projection of the structural balance is not derived from an aggregate measure of the output gap. Under the ESCB methodology, cyclical components are calculated separately for different revenue and spending items. For more details, see the box entitled "Cyclical adjustment of the government budget balance" in the March 2012 issue of the ECB's Monthly Bulletin and the box entitled "The structural balance as an indicator of the underlying fiscal position" in the September 2014 issue of the ECB's Monthly Bulletin.

Over the medium term, the fundamentals remain in place for a continued expansion. A number of favourable factors are expected to continue to support domestic demand. The ECB's very accommodative monetary policy stance continues to be transmitted to the economy. Growth in lending to the private sector continues to increase, spurred by low interest rates and favourable bank lending conditions. Lower deleveraging needs will also contribute to the dynamism of private expenditure. Additionally, private consumption and residential investment should benefit from healthy labour market conditions and rising net worth. At the same time, business investment will continue to expand, also reflecting rising profits in the context of growing demand pressures and high capacity utilisation. Euro area exports are expected to remain robust as they benefit from the ongoing expansion of global economic activity and the corresponding growth in euro area foreign demand.

Nevertheless, real GDP growth is projected to slow gradually over the projection horizon, as some tailwinds gradually fade. The impact of past monetary policy measures is expected to gradually decline over the projection horizon. A slowdown in the growth rate of euro area foreign demand is expected to dampen export growth. Employment growth is also expected to slow down, partly related to increasingly binding labour supply shortages in some euro area countries. In addition, private consumption growth is expected to moderate, reflecting a normalisation of the saving ratio from low levels in the context of the cyclical expansion in some euro area countries.

Real disposable income growth is set to strengthen in 2018 and 2019 in the context of stronger wages and direct tax cuts, before weakening in 2020. The contribution of gross wages and salaries to disposable income growth is expected to increase markedly in 2018, driven by stronger wage growth, before weakening somewhat during the remainder of the period, as further increases in nominal wage growth cannot fully offset the impact of the slowdown in employment. Growth in other personal income is projected to pick up marginally, in line with rising profits. The contribution of net fiscal transfers is expected to become less negative in 2018 and 2019 in the context of cuts to social security contributions and direct taxation, before tightening again in 2020. Overall, the composition of real disposable income growth is expected to become less favourable for household spending, as consumption typically reacts somewhat more strongly to additional income related to employment growth than to changes in real wages.

Private consumption is projected to be a key driver of growth over the projection horizon. Favourable consumer confidence, expected further improvements in labour market conditions and rising real wages per employee suggest robust consumption growth over the next few quarters. Nevertheless, private consumption growth is projected to fall somewhat behind real disposable income growth over the projection horizon as households are likely to increasingly divert income into savings.

Private consumption growth should be supported by favourable bank lending conditions, reinforced by the ECB’s monetary policy measures, and by progress achieved in deleveraging. While low interest rates have affected both the interest earnings and the interest payments of households, they tend to favour net borrowers relative to net savers. As the former typically have a higher marginal propensity to consume, this should support aggregate private consumption. In addition, rising household net worth, as well as progress achieved in deleveraging, should also support consumption.

The household saving ratio is expected to increase gradually over the projection horizon from historically low levels. The saving ratio has declined in the recent past, mainly reflecting the improvement in the economic and financial situation of households, some unwinding of pent-up demand in the context of previously postponed big-ticket purchases and the impact of very low interest rates on households' propensity to save. The saving ratio is projected to increase over the projection horizon, mainly reflecting a normalisation in the context of the cyclical expansion. In addition, households are expected to increase their saving ratio in response to direct tax cuts in some countries.

Box 1
Technical assumptions about interest rates, exchange rates and commodity prices

Compared with the March 2018 projections, the technical assumptions include a weaker exchange rate of the euro, in particular vis-à-vis the US dollar, higher oil prices in US dollars and lower interest rates. The technical assumptions about interest rates and commodity prices are based on market expectations, with a cut-off date of 22 May 2018. Short-term rates refer to the three-month EURIBOR, with market expectations derived from futures rates. The methodology gives an average level for these short-term interest rates of -0.3% for 2018, -0.2% for 2019 and 0.2% for 2020. The market expectations for euro area ten-year nominal government bond yields imply an average level of 1.2% in 2018, 1.5% in 2019 and 1.7% in 2020.[3] Compared with the March 2018 projections, market expectations for short-term interest rates have been revised down by 10 basis points for 2019 and 20 basis points for 2020, while long-term interest rates have been revised down by about 15 basis points over the projection horizon.

As regards commodity prices, on the basis of the path implied by futures markets by taking the average of the two-week period ending on the cut-off date of 22 May 2018, the price of a barrel of Brent crude oil is assumed to increase from USD 54.4 in 2017 to USD 74.5 in 2018, and to decline to USD 73.5 in 2019 and USD 68.7 in 2020. This path implies that, in comparison with the March 2018 projections, oil prices in US dollars are 14.6% higher in 2018, 20.2% higher in 2019 and 17.7% higher in 2020. The prices of non-energy commodities in US dollars are assumed to rise substantially in 2018 and somewhat more moderately beyond.[4]

Bilateral exchange rates are assumed to remain unchanged over the projection horizon at the average levels prevailing in the two-week period ending on the cut-off date of 22 May 2018. This implies an average exchange rate of USD 1.20 per euro in 2018 and of USD 1.18 per euro over 2019-20, compared with USD 1.24 in the March 2018 projections. The effective exchange rate of the euro (against 38 trading partners) is 0.3% weaker than entailed in the March 2018 projections.

[3] The assumption for euro area ten-year nominal government bond yields is based on the weighted average of countries' ten-year benchmark bond yields, weighted by annual GDP figures and extended by the forward path derived from the ECB's euro area all-bonds ten-year par yield, with the initial discrepancy between the two series kept constant over the projection horizon. The spreads between country-specific government bond yields and the corresponding euro area average are assumed to be constant over the projection horizon.

[4] Oil and food commodity price assumptions are based on futures prices up to the end of the projection horizon. The prices of other non-energy hard commodities are assumed to follow futures until the second quarter of 2019 and thereafter to evolve in line with global economic activity.

Technical assumptions

	June 2018				March 2018			
	2017	2018	2019	2020	2017	2018	2019	2020
Three-month EURIBOR (percentage per annum)	-0.3	-0.3	-0.2	0.2	-0.3	-0.3	-0.1	0.4
Ten-year government bond yields (percentage per annum)	1.0	1.2	1.5	1.7	1.0	1.3	1.6	1.9
Oil price (in USD/barrel)	54.4	74.5	73.5	68.7	54.4	65.0	61.2	58.3
Non-energy commodity prices, in USD (annual percentage change)	7.9	9.3	2.5	4.1	7.9	7.4	3.2	4.5
USD/EUR exchange rate	1.13	1.20	1.18	1.18	1.13	1.23	1.24	1.24
Euro nominal effective exchange rate (EER38) (annual percentage change)	2.2	4.4	-0.1	0.0	2.2	4.5	0.1	0.0

The expansion of residential investment is expected to continue, albeit at a slower rate than that seen in the last two years. Housing investment growth slowed in the second half of 2017, as the construction sector in some euro area countries started to face increasing supply-side constraints, notably labour shortages. The key conditions for a further recovery in residential investment remain in place over the projection horizon, with surveys indicating that households increasingly plan to buy or build a home within the next two years or, in particular, to embark on home improvements. Nonetheless, despite buoyant demand for housing, the expansion is expected to be dampened by increasingly binding capacity constraints in the construction sector, slightly tighter financing conditions and adverse demographic trends.

Business investment is expected to continue to recover over the projection horizon, albeit at a declining pace. A number of factors are expected to continue to support business investment: business confidence remains very elevated on the back of favourable production expectations and large order books; capacity utilisation remains well above its long-term average and lack of equipment is increasingly cited as a factor limiting production in manufacturing; financing conditions are expected to remain very supportive over the projection horizon; and profits are expected to increase in the context of an already cash-rich non-financial corporation sector. Moreover, the strong recovery in stock prices observed in recent years and moderate debt financing growth have brought the leverage ratio (debt to total assets) in the non-financial corporation sector close to historical lows. However, consolidated gross indebtedness (the ratio of debt to income) has declined far less, standing now at pre-crisis levels. A gradual loss of momentum in business investment over the projection horizon also reflects the overall deceleration in both domestic and foreign demand.

Box 2
The international environment

While the global economic expansion has continued, recent data point to a slight softening of momentum. Rising yields, stock market volatility and the appreciation of the US dollar have contributed to somewhat tighter financial conditions – with some emerging market economies seeing pronounced financial market stress in recent weeks. The increase in the oil price has dampened prospects in oil-importing economies. Nonetheless, the near-term global outlook remains essentially solid. Advanced economies are benefiting from accommodative monetary policies, while the United States, in particular, has profited from the sizeable US fiscal stimulus. Export-oriented economies have been bolstered by the global trade revival, and commodity exporters are supported by rising commodity prices. While concerns about protectionism have increased, the tariff increases implemented so far (on US steel and aluminium imports) are likely to have only small direct macroeconomic effects, although the general trend towards greater protectionism may weigh on investor confidence. Looking further ahead, activity is expected to slow over the medium term as business cycles mature across advanced economies and policy support gradually diminishes. China's transition to a lower growth path, which is less dependent on policy stimulus, is likely to weigh on the outlook. In addition, while commodity-exporting economies are recovering, they still face the need for fiscal consolidation. Overall, growth in global activity (excluding the euro area) is projected to increase from 3.8% in 2017 to 4.0% in 2018, and then to decelerate to 3.7% by 2020. Compared with the March 2018 projections, global GDP growth has been revised downwards by 0.1 percentage point in 2018 and in 2019. In 2018 this reflects softer data at the start of the year in advanced economies, and in 2019 it reflects a weaker outlook in some emerging market economies.

The international environment

(annual percentage changes)

	June 2018				March 2018			
	2017	2018	2019	2020	2017	2018	2019	2020
World (excluding euro area) real GDP	3.8	4.0	3.9	3.7	3.8	4.1	3.9	3.7
Global (excluding euro area) trade[1)]	5.2	5.1	4.6	4.0	5.6	4.9	4.5	3.9
Euro area foreign demand[2)]	5.2	5.2	4.3	3.7	5.5	4.7	4.1	3.6

1) Calculated as a weighted average of imports.
2) Calculated as a weighted average of imports of euro area trading partners.

After strong growth in 2017, global trade indicators point to a modest deceleration in the first months of this year. Nonetheless, continued cyclical momentum in the near term should bolster global trade, outweighing the adverse effects of the higher tariffs in the United States and China. However, as cyclical forces fade, global trade is expected to decelerate, growing broadly in line with activity over the medium term. Euro area foreign demand growth is expected to stand at 5.2% in 2018, slowing to 3.7% by 2020. Compared with the March 2018 projections, annual euro area foreign demand growth has been revised upwards by 0.5 percentage point in 2018 due to a carry-over effect from an upward revision to data for the fourth quarter of 2017, which offsets slightly weaker global import growth at the start of 2018. Growth in euro area foreign demand has been revised slightly upwards in 2019 and 2020, mostly reflecting expectations of more trade-intensive growth in some central and eastern European economies.

Extra-euro area export growth is projected to be dampened by the past appreciation of the euro along with slowing foreign demand. Extra-euro area exports are expected to grow at a slower pace than euro area foreign demand in the coming quarters, on account of the past appreciation of the euro, implying some limited further losses in export market shares. Extra-euro area imports are expected to benefit from the positive domestic demand developments and, in the coming quarters, from the stronger euro. As import growth is projected to decelerate to a lesser extent than export growth, the contribution of net trade to economic growth is projected to be only marginally positive over the projection horizon, following a very positive contribution in 2017.

Employment growth is projected to decelerate as labour shortages are expected to become increasingly binding in some countries. Headcount employment in the euro area increased by 0.3% in the fourth quarter of 2017 and is estimated to have expanded further in the first quarter of this year. The recent strength in employment growth has been broad-based across countries, and forward-looking surveys suggest further solid employment growth in the near term. Nevertheless, employment growth is projected to lose some momentum. In 2018 the impact of some favourable temporary factors (such as fiscal stimuli in certain euro area countries) is expected to gradually fade, and public sector employment is projected to be reduced in some countries. Labour supply shortages are assumed to intensify thereafter in some countries.

Labour force growth is projected to be increasingly dampened by supply shortages. The labour force is expected to continue to expand over the projection horizon, reflecting net immigration of workers, the expected integration of refugees and a further increase in labour market participation rates. Nevertheless, these positive effects are projected to be gradually outweighed over the projection horizon by the adverse impact of the ageing of the population, as older workers leave the workforce in higher numbers than younger workers enter it and because older workers have lower participation rates (despite some expected increase in the latter).

The unemployment rate is expected to decline to 7.3% in 2020. The unemployment rate declined to 8.6% in the first quarter of 2018, which is the lowest level observed since late 2008. Looking ahead, the number of unemployed is projected to continue to decline substantially, nearing the level of its pre-crisis trough.

Reflecting its cyclical pattern, labour productivity growth will remain sustained. Labour productivity increased by 0.9% in 2017. Looking ahead, the above-mentioned slowdown in employment growth, the increasing utilisation of capital in the context of diminishing slack, the higher number of hours worked per person and some gains in total factor productivity suggest that labour productivity growth per occupied person will be broadly sustained over the projection horizon. However, it is expected to remain slightly below its pre-crisis average rate of 1.0%.

Real GDP growth is expected to remain above potential growth over the projection horizon. Potential output is estimated to have gained some momentum in recent years, supported by increasing contributions from capital and total factor productivity. At the end of the projection horizon, although still lagging actual growth in real GDP, potential growth is expected to increase at a rate slightly lower than that experienced before the crisis. It must be noted, however, that both potential growth and its drivers are unobservable and such estimates are surrounded by considerable uncertainty.

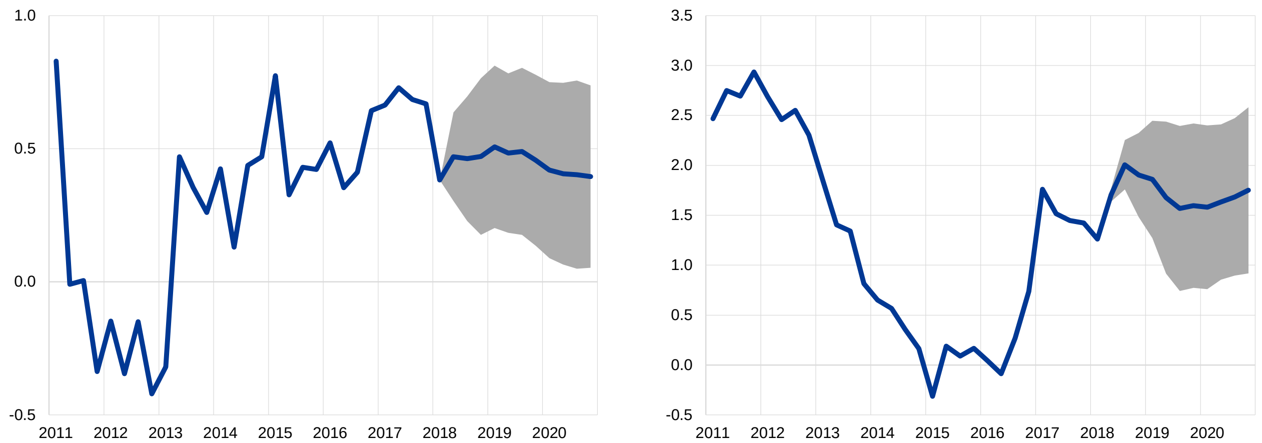
Compared with the March 2018 projections, real GDP growth has been revised down for 2018 and is broadly unchanged for 2019-20. The downward revision for 2018 relates mainly to weaker than previously expected real GDP growth in the first quarter.

Chart 1
Macroeconomic projections[1)]

(quarterly data)

Euro area real GDP[2)]
(quarter-on-quarter percentage changes)

Euro area HICP
(year-on-year percentage changes)



1) The ranges shown around the central projections are based on the differences between actual outcomes and previous projections carried out over a number of years. The width of the ranges is twice the average absolute value of these differences. The method used for calculating the ranges, involving a correction for exceptional events, is documented in *New procedure for constructing Eurosystem and ECB staff projection ranges*, ECB, December 2009, available on the ECB's website.
http://www.ecb.europa.eu/pub/pdf/other/newprocedureforprojections200912en.pdf?917c588c190f66c694c463d2cee934d4
2) Working day-adjusted data.

2 Prices and costs

HICP inflation is projected to remain flat at 1.7% in each year over the horizon, as a declining profile of HICP energy inflation offsets a gradual strengthening in HICP inflation excluding energy and food. Although HICP energy inflation is expected to strengthen in the coming months, reflecting the recent increases in oil prices and some upward base effects, from end-2018 until mid-2019 it should decrease sharply given strong downward base effects. Thereafter it is expected to contribute negatively to overall HICP inflation, reflecting the downward-sloping pattern of the oil price futures curve, despite some upward effects from energy taxes. HICP food inflation is envisaged to remain broadly flat at around 2.0% over the horizon. HICP inflation excluding energy and food is projected to rise as supply constraints become increasingly binding. In particular, the increasing labour market tightness, with labour supply constraints intensifying in some countries, is expected to push up wage growth and, given a rather flat outlook for labour productivity, the resulting higher unit labour cost increases should be passed on, at least partly, to prices. Some further upward effects on HICP inflation excluding energy and food are expected to come from external price developments as past increases in oil prices and the assumed rises in non-energy commodity prices indirectly impact this inflation component. HICP inflation excluding energy and food is projected to rise gradually to 1.9% in 2020.

Wage growth is expected to pick up markedly over the projection horizon as labour markets tighten and measures that have dampened wage growth in some countries over the past few years expire. Growth in compensation per employee is projected to rise from 1.6% in 2017 to 2.7% in 2020.[5] Unit labour cost growth is expected to strengthen to a similar extent as growth in compensation per employee, given the broadly unchanged pace of productivity growth over the projection horizon. The main driver of the pick-up in wage growth is the envisaged further improvement in euro area labour market conditions, with increasing labour market tightness and distinct labour supply shortages in some parts of the euro area. The outcome of recent wage negotiations in several euro area countries tends to suggest a favourable growth momentum for wages, in line with diminishing slack. Beyond the cyclical momentum, the significant pick-up in headline inflation in 2017 compared with the previous three years can also be expected to contribute to a rise in wage growth in euro area countries where wage formation processes include backward-looking indexation elements. In addition, crisis-related factors that had a dampening impact on wages, such as the need for wage moderation to regain price competitiveness in some countries and pent-up wage restraint in view of binding downward rigidities in nominal wages during the crisis, should gradually abate as the economic expansion continues and broadens across euro area countries. Furthermore, some government measures which have curbed wage growth in the past are expected to become less relevant.

Profit margins are not expected to increase inflationary pressures over the projection horizon. The projected increases in unit labour cost growth and in unit net indirect taxes are expected to constrain the pace of expansion of profit margins given the limited pricing power of firms, particularly towards the end of the projection horizon.

External price pressures are expected to remain positive but should moderate over the projection horizon. The import deflator rose strongly in 2017, reflecting the turnaround in oil and other commodity prices. Over the projection horizon, import price developments should moderate. This reflects a declining path of oil prices and the past appreciation of the euro, which will contain the impact of rising non-oil commodity prices and of the gradually rising underlying global price pressures related to diminishing global slack.

Compared with the March 2018 projections, the outlook for HICP inflation has been revised up considerably for 2018 and 2019. The significant upward revision to the oil price assumptions in US dollars together with the depreciation of the euro vis-à-vis the dollar imply a strong upward revision to the short-term outlook for

5 A temporary slowdown expected in 2019 reflects the implementation of a fiscal measure in France, namely the conversion of a tax credit (the CICE) into a permanent cut in employers' social security contributions. As the decrease in growth in compensation per employee and unit labour costs is largely offset by a corresponding increase in profit margins, the impact on price-setting is expected to be limited.

consumer energy inflation. HICP inflation excluding energy and food has been revised up slightly for 2019 and 2020, owing to upward lagged indirect effects from oil price increases and small upward revisions to growth in compensation per employee.

3 Fiscal outlook

The euro area fiscal stance is projected to be mildly expansionary in 2018 and broadly neutral, on average, over 2019-20. The fiscal policy stance is measured as the change in the cyclically adjusted primary balance net of government support to the financial sector. In 2018 the expansionary stance is driven mainly by cuts in direct taxes and social security contributions and the assumption of more dynamic growth in government spending. In 2019-20 the fiscal stance is projected to be on average neutral, as further cuts in direct taxes and social security contributions are projected to be offset by more subdued growth in government spending.

Over the projection horizon, both the government deficit and debt ratios are projected to be on a downward path. The fiscal projection entails a gradual decline in the government deficit over the projection horizon, owing mainly to an improvement in the cyclical component and a decline in interest payments, partly offset by a mild deterioration in the cyclically adjusted primary balance. The government debt-to-GDP ratio is expected to remain on a declining path over the projection horizon, supported by a favourable interest rate-growth rate differential[6] and the improvement in the primary balance. Compared with the March 2018 projections, the deficit outlook is little changed, while the debt-to-GDP ratio has been revised slightly upwards owing mainly to a less favourable interest-growth rate differential.

Box 3
Sensitivity analyses

Projections rely heavily on technical assumptions regarding the evolution of certain key variables. Given that some of these variables can have a large impact on the projections for the euro area, examining the sensitivity of the latter with respect to alternative paths of these underlying assumptions can help in the analysis of risks around the projections. This box discusses the uncertainty around some key underlying assumptions and the sensitivity of the projections with respect to these variables.

1) An alternative oil price path

Alternative oil price models point to a risk of oil prices being higher over the projection horizon than suggested by oil price futures. The technical assumptions for oil price developments underlying the baseline projections, based on oil futures markets, predict a declining profile for oil prices, with the price of a barrel of Brent crude oil standing at about USD 67 at the end

[6] The differential is calculated as the difference between the nominal effective interest rate on debt and the nominal GDP growth rate.

of 2020. This path entailed in oil price futures is consistent with robust growth in world oil demand, a scenario associated with the global economic expansion gaining traction. As regards supply factors, oil price futures also likely reflect that downward impacts on oil prices due to the expansion in the production of shale oil in the United States are partly offset by geopolitical tensions and the agreement between OPEC and some non-OPEC producers to cut production. A combination of alternative models used by ECB staff[7] to predict oil prices over the projection horizon points towards higher oil prices than assumed in the technical assumptions. The materialisation of an alternative oil price path derived from these models, in which oil prices are 8.8% higher than in the baseline assumption by 2020, would marginally dampen real GDP growth (by less than 0.1 percentage point in 2019 and 2020), while entailing a faster increase in HICP inflation (up by 0.1 percentage point in 2019 and by 0.2 percentage point in 2020).

2) An alternative exchange rate path

This sensitivity analysis investigates the effects of a strengthening of the exchange rate of the euro. One source of appreciation risk stems from a stronger than expected economic recovery in the euro area leading to upside inflationary pressures. This scenario is consistent with the distribution of the option-implied risk-neutral densities for the USD/EUR exchange rate on 22 May 2018, which is heavily skewed towards an appreciation of the euro. The 75th percentile of that distribution implies an appreciation of the euro vis-à-vis the US dollar to an exchange rate of USD 1.36 per euro in 2020, which is 14.8% above the baseline assumption for that year. The corresponding assumption for the nominal effective exchange rate of the euro reflects historical regularities, whereby changes in the USD/EUR exchange rate correspond to changes in the effective exchange rate with an elasticity of just above one half. In this scenario, the average of the results from a number of staff macroeconomic models points to real GDP growth being 0.5 percentage point lower in 2019 and 0.3 percentage point lower in 2020. HICP inflation would be 0.5 percentage point lower in both 2019 and 2020.

Box 4
Forecasts by other institutions

A number of forecasts for the euro area are available from both international organisations and private sector institutions. However, these forecasts are not strictly comparable with one another or with the Eurosystem staff macroeconomic projections, as they were finalised at different points in time. Additionally, they use different (partly unspecified) methods to derive assumptions for fiscal, financial and external variables, including oil and other commodity prices. Finally, there are differences in working day adjustment methods across different forecasts (see the table).

As indicated in the table, other institutions' currently available projections for real GDP growth and HICP inflation are within the ranges surrounding the Eurosystem staff projections (shown in brackets in the table).

7 See the four-model combination presented in the article entitled “Forecasting the price of oil”, *Economic Bulletin*, Issue 4, ECB, 2015.

Comparison of forecasts for euro area real GDP growth and HICP inflation

(annual percentage changes)

		GDP growth			HICP inflation		
	Date of release	2018	2019	2020	2018	2019	2020
Eurosystem staff projections	June 2018	2.1	1.9	1.7	1.7	1.7	1.7
		[1.8 - 2.4]	[0.9 - 2.9]	[0.6 - 2.8]	[1.6 - 1.8]	[1.0 - 2.4]	[0.9 - 2.5]
European Commission	May 2018	2.3	2.0	-	1.5	1.6	-
OECD	May 2018	2.2	2.1	-	1.6	1.8	-
Euro Zone Barometer	May 2018	2.3	1.9	1.6	1.5	1.5	1.8
Consensus Economics Forecasts	May 2018	2.3	1.9	1.4	1.5	1.5	1.7
Survey of Professional Forecasters	April 2018	2.4	2.0	1.6	1.5	1.6	1.7
IMF	April 2018	2.4	2.0	1.7	1.5	1.6	1.8

Sources: European Commission Economic Forecast, Spring 2018; IMF World Economic Outlook, April 2018; OECD Economic Outlook, May 2018; Consensus Economics Forecasts, May 2018; the 2020 figure for Consensus Economics is taken from the April 2018 long-term forecast survey; MJEconomics for the Euro Zone Barometer, May 2018; and the ECB's Survey of Professional Forecasters, April 2018.
Notes: The Eurosystem and ECB staff macroeconomic projections and the OECD forecasts both report working day-adjusted annual growth rates, whereas the European Commission and the IMF report annual growth rates that are not adjusted for the number of working days per annum. Other forecasts do not specify whether they report working day-adjusted or non-working day-adjusted data.

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Postal address: 60640 Frankfurt am Main, Germany
Telephone: +49 69 1344 0
Website: www.ecb.europa.eu

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ISSN 2529-4687 (pdf)
EU catalogue No QB-CF-18-001-EN-N (pdf)