

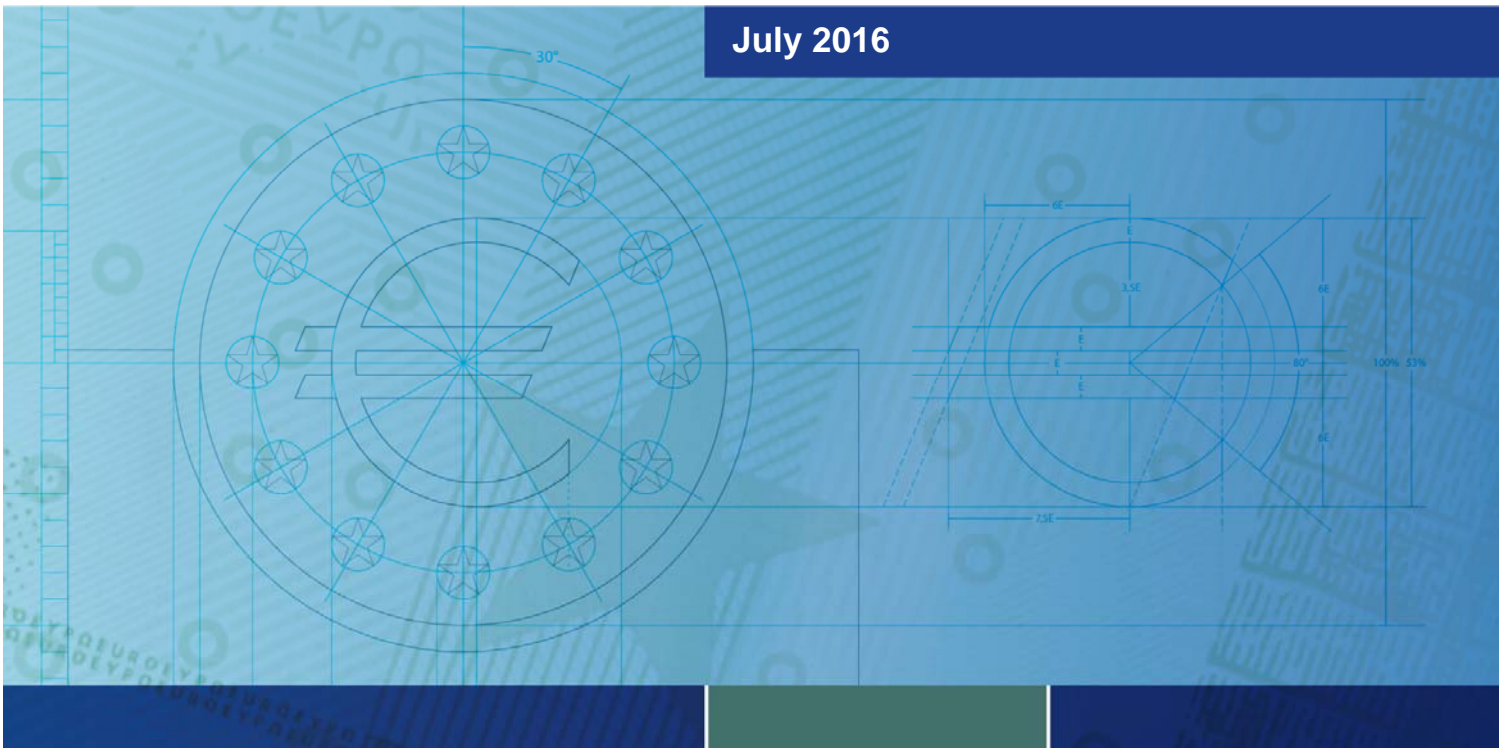


EUROPEAN CENTRAL BANK  
EUROSYSTEM

# The ECB Survey of Professional Forecasters (SPF)

Third quarter of 2016

July 2016



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The results of the ECB Survey of Professional Forecasters (SPF) for the third quarter of 2016<sup>1</sup> show average inflation expectations of 0.3%, 1.2% and 1.5% for 2016, 2017 and 2018 respectively, with slight downward revisions of 0.1 percentage point for 2017 and for 2018. Average longer-term inflation expectations (for 2021) stand at 1.8%, unchanged from the previous round. Real GDP growth expectations are unchanged for 2016, have been revised down by 0.2 percentage point for 2017 and by 0.1 percentage point for 2018, and are unchanged for further ahead, standing at 1.5% for 2016, 1.4% for 2017, 1.6% for 2018 and 1.7% in the longer term (for 2021). Unemployment rate expectations, which are still characterised by a downward profile, are broadly unchanged.

## Table

### Results of the SPF in comparison with other forecasts and projections

(annual percentage changes, unless otherwise indicated)

	Survey horizon			
	2016	2017	2018	Longer-term <sup>1)</sup>
<b>HICP inflation</b>				
SPF Q3 2016	0.3	1.2	1.5	1.8
Previous SPF (Q3 2016)	0.3	1.3	1.6	1.8
Eurosystem staff macroeconomic projections (Jun. 2016)	0.2	1.3	1.6	-
Consensus Economics (Jun. 2016)	0.2	1.3	1.6	2.0
Euro Zone Barometer (Jun. 2016)	0.3	1.4	1.7	1.8
<b>Real GDP growth</b>				
SPF Q3 2016	1.5	1.4	1.6	1.7
Previous SPF (Q2 2016)	1.5	1.6	1.7	1.7
Eurosystem staff macroeconomic projections (Jun. 2016)	1.6	1.7	1.7	-
Consensus Economics (Jun. 2016)	1.6	1.6	1.6	1.4
Euro Zone Barometer (Jun. 2016)	1.6	1.7	1.6	1.5
<b>Unemployment rate<sup>2)</sup></b>				
SPF Q3 2016	10.1	9.7	9.5	8.8
Previous SPF (Q2 2016)	10.1	9.7	9.3	8.8
Eurosystem staff macroeconomic projections (Jun. 2016)	10.2	9.9	9.5	-
Consensus Economics (Jun. 2016)	10.2	9.8	-	-
Euro Zone Barometer (Jun. 2016)	10.3	9.8	9.7	9.0

1) Longer-term expectations refer to 2021 for the SPF Q3 2016 and to 2020 for the SPF Q2 2016. For Consensus Economics and the Euro Zone Barometer, expectations for 2018 and the long term are taken from the April 2016 surveys.

2) As a percentage of the labour force.

<sup>1</sup> The survey was conducted between 30 June and 6 July 2016. The total number of responses was 51, which is slightly below the historical average number of responses to the third quarter round (54). The survey requested information on expectations for the euro area HICP inflation rate, the real GDP growth rate and the unemployment rate for 2016, 2017, 2018 and 2021, as well as for each of these variables one and two years ahead. Participants were provided with a common set of the latest available data for HICP inflation (June 2016 flash estimate, 0.1% year on year), GDP growth (Q1 2016, 1.7% year on year) and unemployment (May 2016, 10.1%). The cut-off date for data used in this report was 12 July 2016.

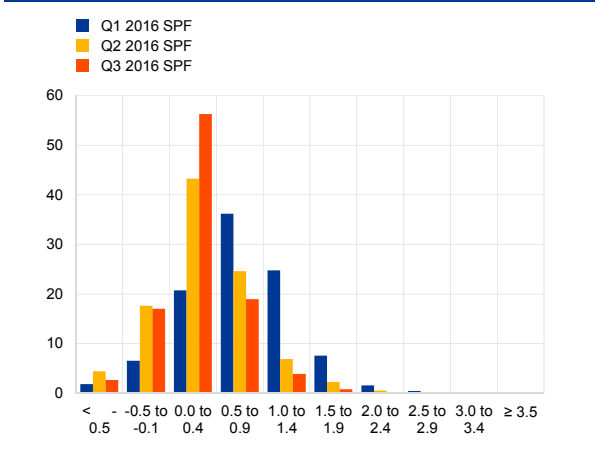
# 1 Inflation expectations revised slightly down for 2017 and 2018

**The Q3 2016 SPF average point forecasts for inflation in 2016, 2017 and 2018 stand at 0.3%, 1.2% and 1.5% respectively.** This implies that forecasts for 2016 are unchanged, while those for 2017 and 2018 have been revised downwards by 0.1 percentage point compared with the survey round from the second quarter of 2016 (see the table). Compared with the June 2016 Eurosystem staff macroeconomic projections, which were finalised on the basis of data and assumptions available in mid-May, Q3 2016 SPF inflation expectations are higher by 0.1 percentage point for 2016, but 0.1 percentage point lower for 2017 and for 2018. For 2017 and 2018, they are also slightly below those from the June 2016 Consensus Economics and Euro Zone Barometer surveys.

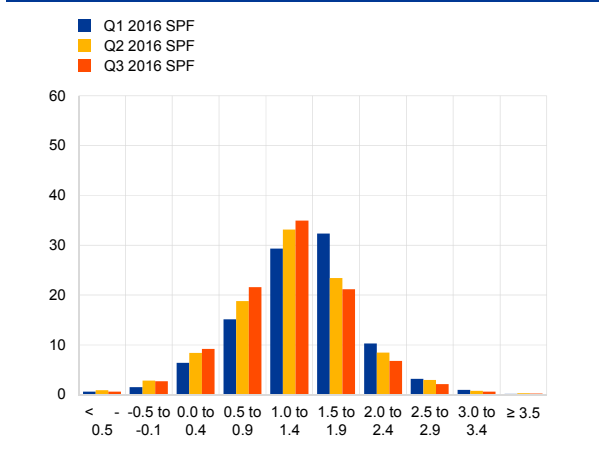
**The expected strong pick-up in inflation between 2016 and 2017 likely reflects the waning impact of past oil price declines.** Other factors are evolving more gradually; for instance, it is assumed that labour cost growth will pick up slowly in the context of declining (albeit still high) unemployment.

**Compared with the previous SPF round, the aggregate probability distributions for expected inflation in 2016 and 2017 are more concentrated around the point forecasts** (see Charts 1 and 2). For 2018, the most likely outcome remains in the 1.5-1.9% range; however, the probability mass on the lower side of the mean has increased compared with the previous round (see Chart 3). According to survey participants, there is a very high probability of inflation remaining below 1.0% in 2016 (95%), but this probability is lower for 2017 (at around 30%) and 2018 (at around 20%). Respondents put the probability of negative average inflation in 2016 at around 20% but considerably lower, at around 2-3%, in 2017 and 2018.

**Chart 1**  
Aggregate probability distribution of inflation expectations for 2016

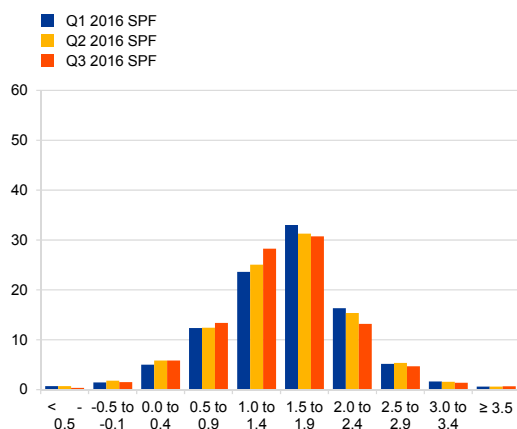


**Chart 2**  
Aggregate probability distribution of inflation expectations for 2017



**Chart 3**

Aggregate probability distribution of inflation expectations for 2018



The SPF results imply that the balance of risks to the baseline inflation outlook remain mostly on the downside. A quantitative comparison of the estimated means of the aggregate probability distribution with the average point forecasts suggests that the risks to the baseline inflation outlook are perceived as being broadly balanced for 2016, but on the downside further ahead.

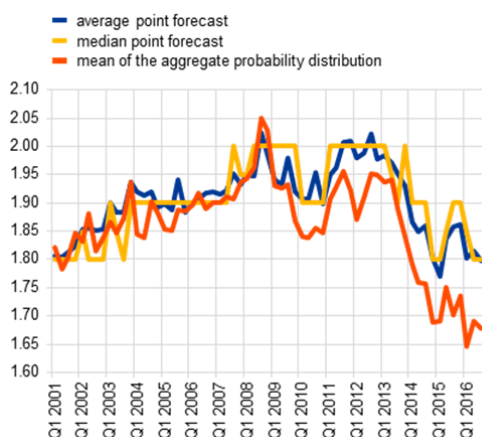
## 2 Longer-term inflation expectations unchanged at 1.8%

The average point forecast for longer-term inflation expectations (for 2021) remains unchanged at 1.8% (1.80% compared with 1.81% when measured to two decimal places). The median point forecast is unchanged at 1.80% (see Chart 4) and the distribution of point forecasts is bi-modal (i.e. there are two most reported values) at 1.8% and 2.0% (see Chart 5). Over three quarters of the 37 respondents who provided longer-term expectations for inflation expect it to be in the range 1.7-2.0%.<sup>2</sup>

<sup>2</sup> The 75th percentile of the distribution of the point forecasts is unchanged at 1.91%, while the 25th percentile of the distribution of the point forecasts is also unchanged at 1.70%.

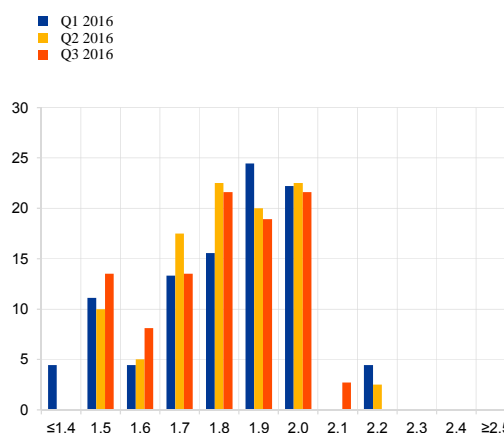
**Chart 4**  
Longer-term inflation expectations

(annual percentage changes)



**Chart 5**  
Cross-sectional distribution of long-term inflation forecasts

(percentage of respondents)



**The aggregate probability distribution is broadly unchanged (albeit slightly more concentrated in the 1.5-1.9% range) when compared with the previous SPF round (see Chart 6).** On average, the balance of risks around the point forecast is assessed as remaining on the downside (as has been the case since 2009), with the estimated mean of the aggregate probability distribution standing at around 1.68% (down from 1.69% in the previous round) compared with the average point estimate of 1.80%. The probability of inflation being at or above 2.0% is 31%, compared with 33% in the second quarter of 2016, while that of its being below 1% is 13%, down from 14% in the previous round. The probability of negative inflation rates remains low at 2%, and is slightly below the previous round.

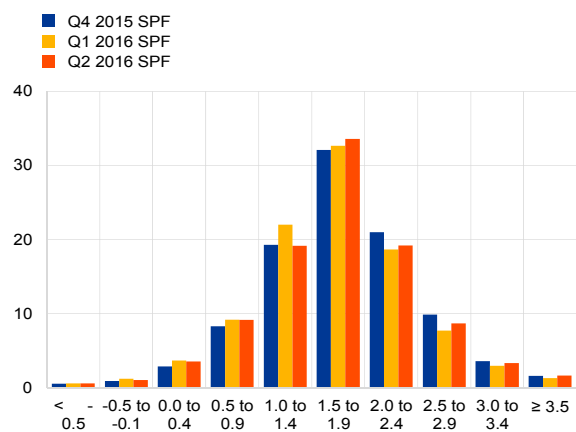
**Disagreement over longer-term inflation expectations, as measured by the standard deviation of the point forecasts, has increased marginally.** At the same time, it remains below average levels observed since 2009. The quasi-standard deviation – a measure which is more robust to outliers – has also increased and remains above historical averages.<sup>3</sup> The aggregate uncertainty surrounding longer-term inflation expectations, as measured by the standard deviation of the aggregate probability distribution (see Chart 7), has decreased slightly, as the increase in disagreement is offset by a decrease in average individual uncertainty (the average standard deviation of the individual probability distributions).<sup>4</sup>

<sup>3</sup> The quasi-standard deviation is calculated as half of the difference between the 16th and 84th percentiles of the sample of point forecasts, which – with “normally” distributed data – delivers the standard deviation.

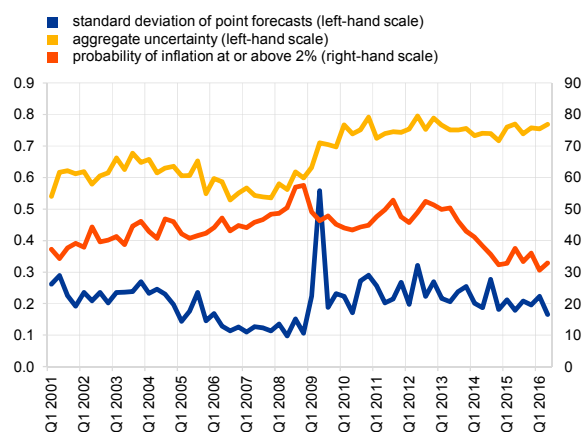
<sup>4</sup> The dispersion of the aggregate probability distribution (“aggregate uncertainty”) can be decomposed into two factors: “disagreement” and average “individual uncertainty”. Disagreement is measured by the dispersion of the individual forecasts, while average individual uncertainty is measured by the average dispersion of the individual probability distributions.

**Chart 6**

Aggregate probability distribution of longer-term inflation expectations (five years ahead)

**Chart 7**

Disagreement and uncertainty regarding longer-term inflation expectations



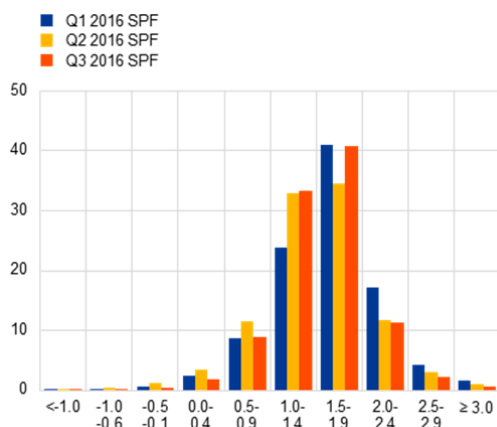
### 3 Real GDP growth expectations revised downwards for 2017 and 2018

**The outlook for economic activity has been revised downwards for both next year and the following one.** The average point forecast for real GDP growth in 2016 remains unchanged at 1.5%. The average point forecast now stands at 1.4% for 2017 (revised down by 0.2 percentage point) and at 1.6% for 2018 (revised down by 0.1 percentage point) (see the table). Based on the qualitative comments provided by the respondents, these revisions largely reflect an expected negative impact on the euro area from the UK referendum result (see the box for more details).

**The average Q3 2016 SPF point forecasts are below the June 2016 Eurosystem staff macroeconomic projections across all horizons.** They are 0.1 percentage point lower for 2016, 0.3 percentage point lower for 2017 and again 0.1 percentage point lower for 2018. SPF expectations for 2016 and 2017 are also below the latest forecasts from the Euro Zone Barometer and those from Consensus Economics, which were prepared before the UK referendum on EU membership.

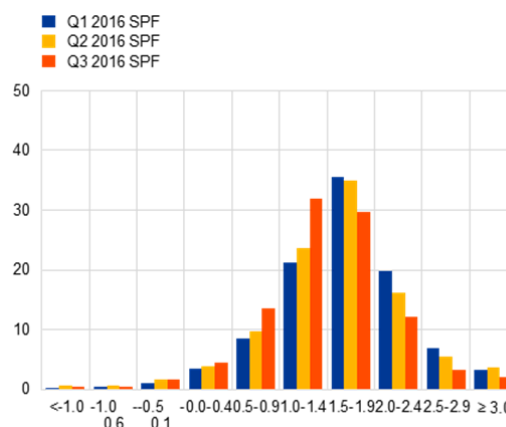
**Chart 8**

Aggregate probability distribution of 2016 GDP growth expectations



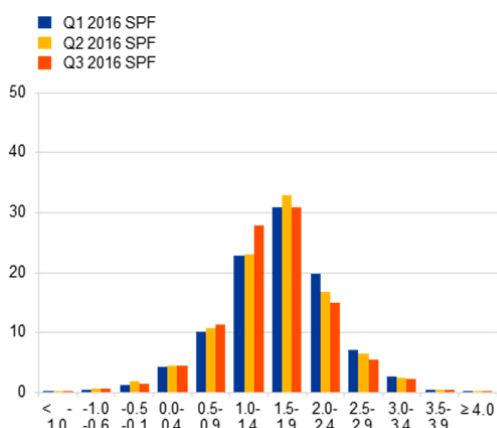
**Chart 9**

Aggregate probability distribution of 2017 GDP growth expectations



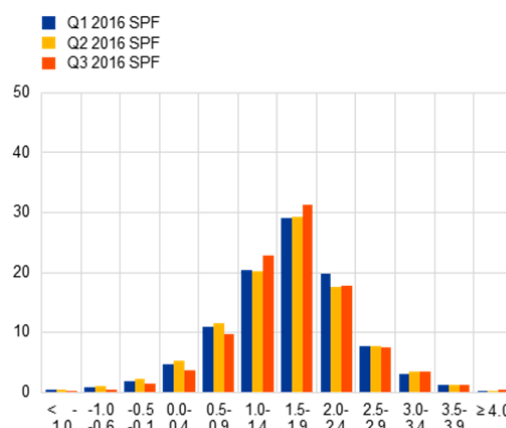
**Chart 10**

Aggregate probability distribution of 2018 GDP growth expectations



**Chart 11**

Aggregate probability distribution of longer-term GDP growth expectations (five years ahead)



The aggregate probability distribution for 2016 has become more concentrated in the range 1.5-1.9%, while those for 2017 and 2018 have shifted towards lower outcomes (see Charts 8-10). For both 2017 and 2018 outcomes above 1.4% are seen as less likely compared with the previous survey round.

The balance of risks to GDP growth (as measured by the difference between the mean of the aggregate probability distribution and the average point forecast) remains somewhat tilted to the downside for all three years, albeit to a lesser extent than in the previous round. The majority of the qualitative comments provided focus on the various channels of risks related to the UK referendum result, with little qualitative information this round on the other risk factors surrounding their forecasts.



**Longer-term growth expectations (for 2021) remain unchanged at 1.7%.** The SPF results for that horizon thus remain higher than the latest available Consensus Economics and Euro Zone Barometer forecasts from April 2016, which stood at 1.4% and 1.5% respectively. The aggregate probability distribution of the SPF longer-term growth expectations has remained broadly unchanged and its mean continues to be lower than the average point forecast, which suggests that respondents perceive risks to be slightly on the downside (see Chart 11).

## Box: Estimated impact of the UK referendum result on SPF growth and inflation forecasts

**The key factor affecting SPF forecasts this round was the possible impact of the UK referendum result on euro area growth and inflation.** In this regard, respondents were asked *“In particular, we would be grateful, if you could let us know whether your latest forecasts (already) include the possible impact of the UK referendum result. If they do, could you please discuss to what extent you include the impact in your euro area growth and inflation baseline forecasts (and the channels by which this would take place) and to what extent you include it in the distribution of risks around the baseline forecasts. If not, please provide your current best assessment of the likely impact.”*

**55% of respondents indicated that they had included an estimate of the likely impact of the UK referendum result in their forecasts.** 28 out of the 51 (or 55%) indicated that they had included an estimate of the likely impact, while 8 (or 16%) reported that they had not yet included an estimate of the likely impact of the UK referendum result on their forecasts. The remaining 15 (or 29%) did not explicitly state whether or not they had included an estimate of the impact of the UK referendum result on their forecasts.

**For GDP growth in 2017, those explicitly including an impact reduced their forecasts by 0.26 percentage point, while those providing no explicit information reduced them by 0.22 percentage point.** Those who had not included the UK referendum result reported essentially no change in forecasts. The downward revision to growth in 2018 of 0.1 percentage point on average reflects the fact that both those who explicitly updated their forecasts and those who did not explicitly state whether they had included the impact of the UK referendum or not revised their forecasts downwards by 0.1 percentage point.

**Table Changes in SPF forecasts linked to the UK referendum\***

	<b>Brexit included</b>	<b>Not included</b>	<b>No information</b>	<b>Total</b>
<b>Responses</b>	28 (55%)	8 (16%)	15 (29%)	51 (100%)
<b>GDP 2017</b>	-0.26 p.p.	0.01 p.p.	-0.22 p.p.	-0.21 p.p.
<b>HICP 2017</b>	-0.07 p.p.	-0.01 p.p.	-0.04 p.p.	-0.05 p.p.

\* The table reports change in forecasts for respondents who reported in both the Q3 2016 and Q2 2016 SPF rounds

**The impact of the UK referendum result on euro area real GDP growth is expected to work through three main channels, according to SPF participants:**

i) net exports to the United Kingdom will decline – as respondents expect the UK economy to weaken – and will be further limited by the depreciation of the pound sterling, which will make imports from the euro area more expensive; ii) uncertainty about the modalities of the new relationship, as well as uncertainty about future European integration more generally, is expected to dampen investment growth in the euro area; iii) increased volatility on financial markets following the UK referendum is expected to have negative effects on credit growth, financing conditions and wealth, and thus negative repercussions for investment and consumption.

**The expected impact of the UK referendum on euro area inflation in the SPF results is small.** Those who explicitly reported including the estimated effects of the referendum result in their forecasts estimated an impact of only 0.07 percentage point on euro area inflation in 2017.

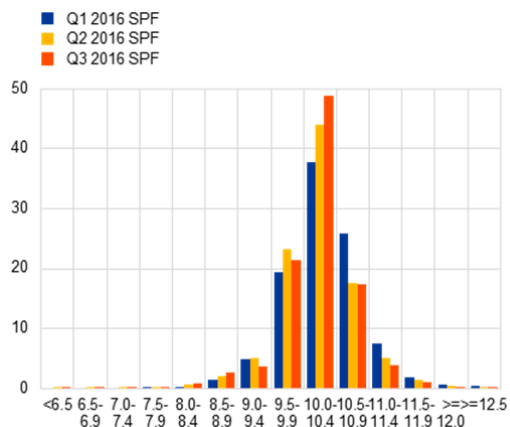
## 4 Unemployment rate expectations remain broadly unchanged on a declining trajectory

**The average point forecasts for the unemployment rate are 10.1% for 2016, 9.7% for 2017 and 9.5% for 2018.** This implies no revisions for 2016 and 2017, but an upward revision by 0.2 percentage point for 2018. The expectations path remains on a downward slope and lower than other forecasts. In particular, compared with the June 2016 Eurosystem staff macroeconomic projections, latest SPF expectations are lower by 0.1 percentage point in 2016 and by 0.2 percentage point in 2017 and 2018. The SPF expectations are also lower than those in the June 2016 Consensus Economics and Euro Zone Barometer.

**The balance of risks to the unemployment rate expectations (as measured by the difference between the mean of the aggregate probability distribution and the average point forecast) remains somewhat tilted to the upside for all the horizons** (see Charts 12-14). These upside risks principally mirror downside risks to expected real GDP growth. In the short run, some forecasters argue that the slowdown in global growth and the increasing uncertainty caused by the UK referendum result might cause a reduction in investments, thereby postponing the creation of new jobs. The majority of those forecasters who mentioned downside risks see a chance that structural reforms and internal growth could reduce the euro area unemployment rate in the long term more strongly than in their baseline forecasts. On balance, the upside risks are judged to dominate and increase over the forecast horizon.

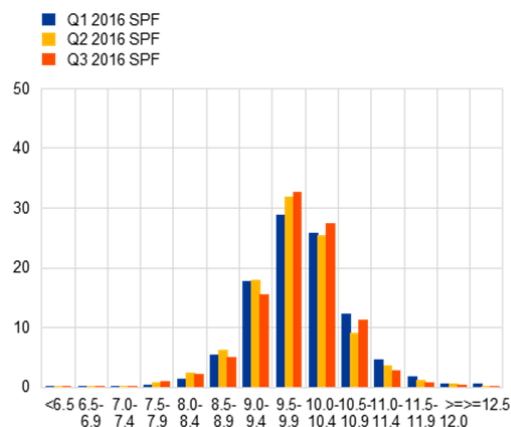
**Chart 12**

Aggregate probability distribution of the unemployment rate for 2016



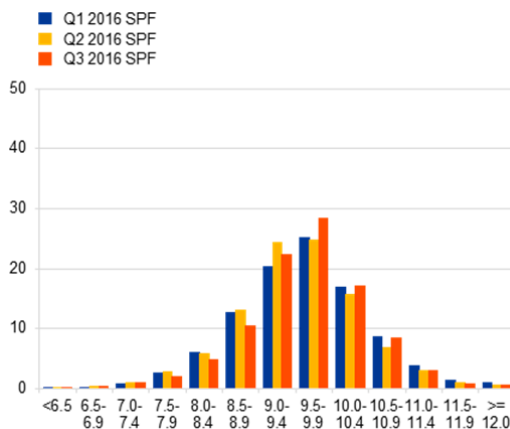
**Chart 13**

Aggregate probability distribution of the unemployment rate for 2017



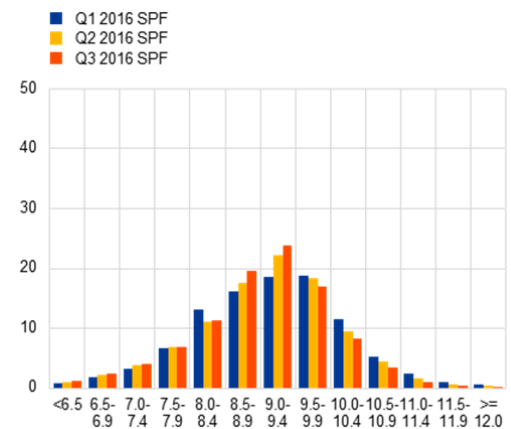
**Chart 14**

Aggregate probability distribution of the unemployment rate for 2018



**Chart 15**

Aggregate probability distribution of longer-term unemployment rate expectations



**The average point forecast for the longer-term unemployment rate (in 2021) is 8.8%, unchanged from the previous round.** This is the lowest level since 2012, although it is still above average pre-crisis expectations (of around 7%). However, the aggregate probability distribution has shifted towards higher levels compared with the previous SPF round (see Chart 15). As the mean of the distribution is higher than the average point forecast, forecasters see upside risks. This is consistent with the downside risks recorded for real GDP developments.

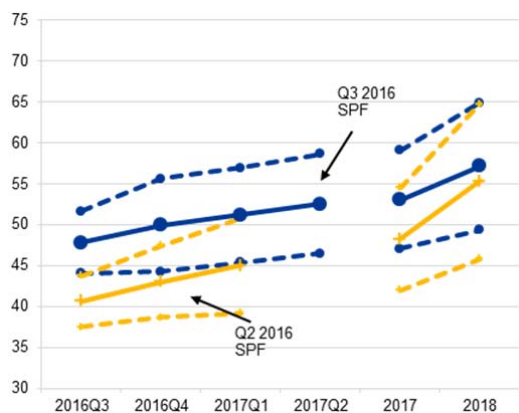
## 5 Other variables and conditioning assumptions

**Other information provided by respondents suggests that they expect oil prices to continue to rise gradually, the USD/EUR exchange rate to remain broadly unchanged, monetary policy to stay accommodative and labour cost growth to rise slowly.** Oil prices are expected to average USD 48 per barrel in the third quarter of 2016, to increase to USD 53 by the second quarter of 2017 and to reach levels around USD 57 in 2018. Compared with the previous survey round, oil price assumptions are higher by around 15% in the third quarter of 2016, 10% in 2017 and approximately 5% in 2018 (see Chart 16a). The mean assumption for the USD/EUR exchange rate is that it will fluctuate around 1.10, largely unchanged from the previous SPF round (see Chart 16b). The combination of the upward revisions to oil prices in US dollars and an unchanged USD/EUR exchange rate imply that oil prices in euro terms are expected to be higher by 5-15% over the period 2016-18. The profile of annual growth in compensation per employee has been marginally revised down by around 0.1 percentage point across the horizon, standing at 1.4% for 2016, 1.6% for 2017, 1.8% for 2018 and 1.9% for 2021 (see Chart 16c). The mean assumption for the rate on the Eurosystem's main refinancing operations is that it will be slightly below 0% until the second quarter of 2017 and to only edge upwards to 0.1% in 2018 (see Chart 16d). Compared with the previous round, the expectation is essentially unchanged for 2016 and 2017 and 0.1 percentage point lower for 2018.

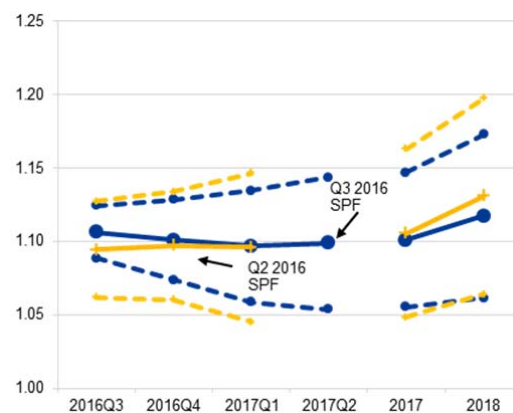
## Chart 16

### Underlying assumptions

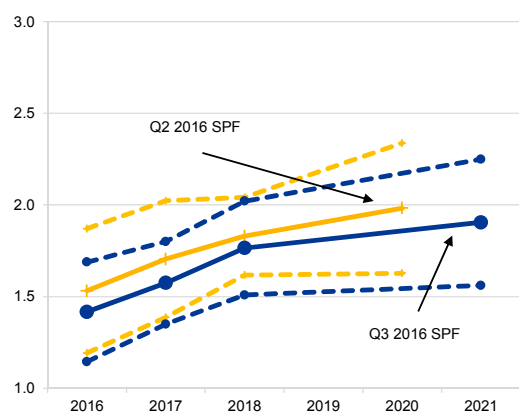
a) Oil price (in USD)



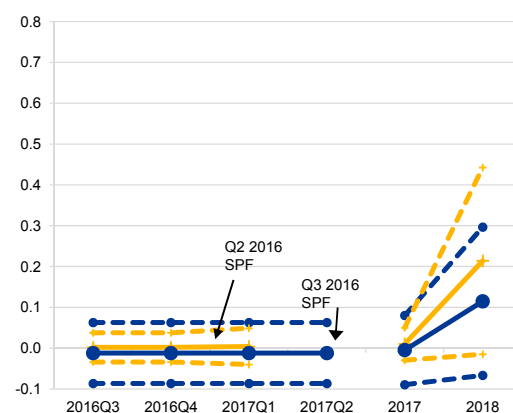
b) USD/EUR exchange rate



c) Compensation per employee



d) ECB interest rate



Notes: The dashed lines proxy the uncertainty surrounding average assumptions (plus/minus one standard deviation of the point estimates).

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