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The results of the ECB Survey of Professional Forecasters (SPF) for the fourth quarter of 2015¹ imply average inflation expectations of 0.1%, 1.0% and 1.5% for 2015, 2016 and 2017 respectively. This represents downward revisions of 0.1 percentage point for 2015 and 2017 and 0.3 percentage point for 2016. However, average longer-term inflation expectations (for 2020) remained unchanged at 1.9% (also unchanged to the second decimal place at 1.86%). Real GDP growth expectations were broadly unchanged at all horizons, standing at 1.5% for 2015, 1.7% for 2016, 1.8% for 2017 and 1.7% in the longer term. Unemployment rate expectations continue to show a downward profile, although expectations for 2017 and longer term were revised upwards slightly.

Table

Results of the SPF in comparison with other forecasts and projections

(annual percentage changes, unless otherwise indicated)

	Survey horizon			
	2015	2016	2017	Longer-term ¹⁾
HICP inflation				
SPF Q4 2015	0.1	1.0	1.5	1.9
Previous SPF (Q3 2015)	0.2	1.3	1.6	1.9
ECB staff macroeconomic projections (Sep. 2015)	0.1	1.1	1.7	-
Consensus Economics (Sep. 2015)	0.2	1.2	1.5	1.9
Euro Zone Barometer (Sep. 2015)	0.2	1.1	1.6	1.8
Real GDP growth	2015	2016	2017	Longer-term¹⁾
SPF Q4 2015	1.5	1.7	1.8	1.7
Previous SPF (Q3 2015)	1.4	1.8	1.8	1.7
ECB staff macroeconomic projections (Sep. 2015)	1.4	1.7	1.8	-
Consensus Economics (Sep. 2015)	1.4	1.7	1.6	1.4
Euro Zone Barometer (Sep. 2015)	1.5	1.8	1.6	1.5
Unemployment rate²⁾	2015	2016	2017	Longer-term¹⁾
SPF Q4 2015	11.0	10.5	10.1	9.2
Previous SPF (Q3 2015)	11.0	10.5	10.0	9.0
ECB staff macroeconomic projections (Sep. 2015)	11.0	10.6	10.1	-
Consensus Economics (Sep. 2015)	11.1	10.6	-	-
Euro Zone Barometer (Sep. 2015)	11.0	10.5	10.2	9.5

1) Longer-term expectations refer to 2020 for the SPF and for Consensus Economics and to 2019 for the Euro Zone Barometer. Consensus Economics and Euro Zone Barometer expectations for 2017 and longer term are taken from the April 2015 and July 2015 surveys respectively.

2) As a percentage of the labour force.

1

SPF short-term inflation expectations revised downwards

The Q4 2015 SPF average point forecasts for inflation in 2015, 2016 and 2017 stand at 0.1%, 1.0% and 1.5% respectively. This implies downward revisions of

¹ The survey was conducted between 30 September and 6 October 2015. The total number of responses was 60, which is exactly in line the historical average for responses to the Q4 round. The survey requested information on expectations for the euro area HICP inflation rate, the real GDP growth rate and the unemployment rate for 2015, 2016, 2017 and 2020, 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 (September 2015, -0.1% year on year), GDP growth (Q2 2015, 1.5% year on year) and unemployment (August 2015, 11.0%). The cut-off date for data used in this report was 13 October 2015.

0.1 percentage point for 2015 and 2017 compared with the survey round of the third quarter of 2015 (see Table). Forecasts for 2016 were revised downwards by more, i.e. 0.3 percentage point. Compared with the September 2015 ECB staff macroeconomic projection exercise, which was finalised on the basis of data and assumptions available in mid-August, expected inflation is the same in 2015, lower by 0.1 percentage point for 2016 and by 0.2 percentage point for 2017. The Q4 SPF expectations are generally slightly lower than those from the September 2015 Consensus Economics and Euro Zone Barometer surveys.

Most SPF respondents continue to envisage a strong pick-up in inflation in 2016 and 2017. Headline inflation is expected to pick up around the turn of the year (2015-16) as the effects of the decreases in oil prices at end-2014 and in early 2015 begin to drop out of the annual rates of change. However, the effects of the most recent decreases in oil prices are expected to keep headline inflation low until the turn of the year. The past depreciation of the euro is still expected to exert upward pressure on inflation in 2015 and 2016. Respondents consider that the expected profile of moderate but gradually increasing underlying inflation is driven by the ongoing expansion of economic activity. As economic growth is expected to remain moderate, there will only be a slow closing of the output gap. Nonetheless, domestic price pressures are anticipated to gradually rise, supported by the monetary policy stance.

Chart 1
Aggregated probability distribution of inflation expectations for 2015

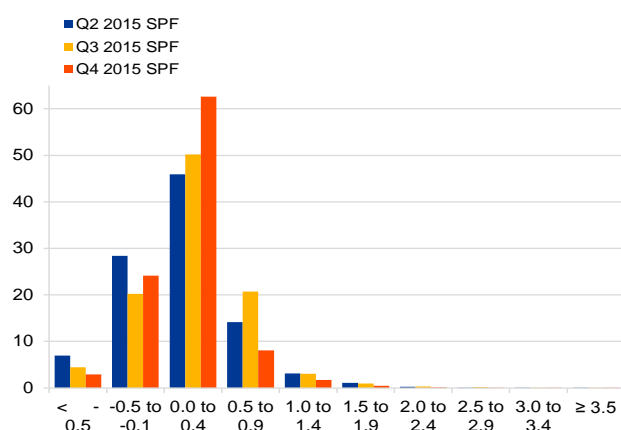
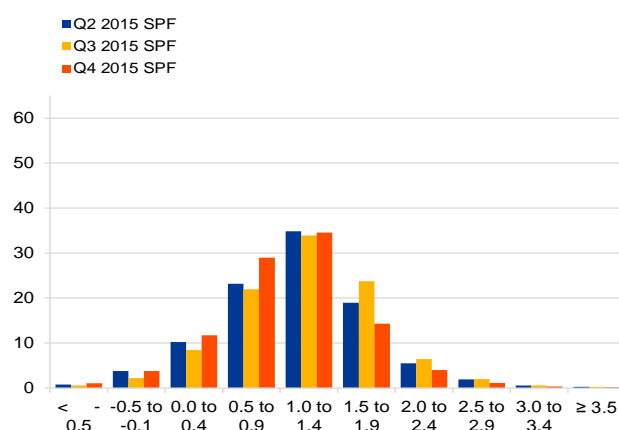


Chart 2
Aggregated probability distribution of inflation expectations for 2016

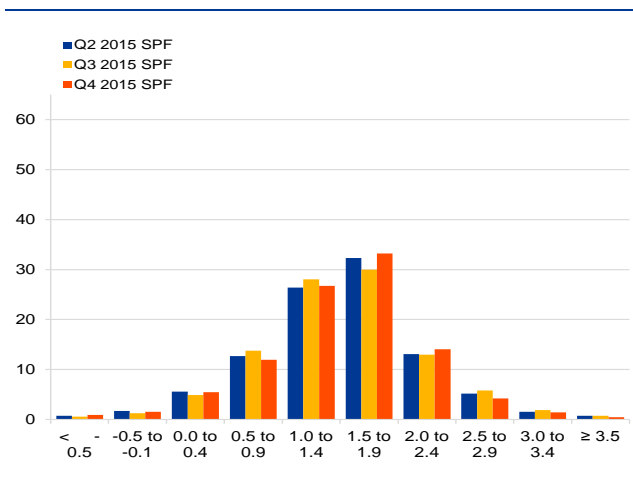


SPF respondents reported that the downward revisions from the previous round mainly reflected oil price developments and weaker HICP inflation outcomes. In addition, reflecting the slight appreciation of the euro, the impact of the exchange rate on inflation is forecast to be slightly less positive than previously expected.

Compared with the previous SPF round, the aggregated probability distributions for expected inflation in 2015 and 2016 moved towards lower

Chart 3

Aggregated probability distribution of inflation expectations for 2017



outcomes, but the modal (or most likely) outcomes remained in the same bins (see Chart 1 and Chart 2). For 2015 the most likely outcome remained in the 0.0-0.4% bin and for 2016 in the 1.0-1.4% bin. For 2017 the most likely (modal) outcome remained in the 1.5-1.9% range. However, notwithstanding the small downward reduction in the point forecast, the probability distribution moved slightly towards higher outcomes. According to survey participants, while there is a relatively high probability of inflation remaining below 1.0% in 2016 (46%) and in 2017 (20%), the probability of negative inflation remains low, at 2% in 2016 and 1% in 2017 (see also Chart 3).

Based on both the quantitative and qualitative information provided by SPF respondents, the balance of risks to the baseline inflation outlook remained somewhat on the downside. A comparison

of the estimated means of the aggregated probability distribution with the average point forecasts suggests that the risks to the baseline inflation outlook are perceived as relatively balanced for 2015 and on the downside for 2016 and 2017. The qualitative comments refer to downside risks stemming primarily from external factors – namely oil prices and emerging market economies. Regarding oil prices, downward risks are perceived to dominate and are generally linked to the ample supply of oil, combined with weaker oil demand from emerging economies. Emerging market economies, in particular China and Brazil, are also cited as more general downward risks to the global demand outlook. Domestic risk factors, such as economic growth and labour market pressures, were cited relatively infrequently and are generally seen as broadly balanced.

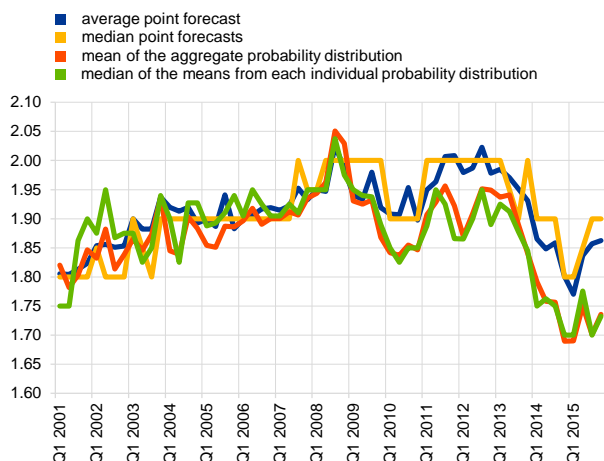
2 Longer-term inflation expectations for 2020 unchanged at 1.9%

The average point forecast for longer-term inflation expectations (for 2020) remained unchanged at 1.9%. These unchanged expectations also hold when considered at two decimal places (1.86%). The median also remained unchanged at 1.90% and the modal (most reported) value remained at 2.0% (see Chart 4). Over 80% of respondents expect longer-term inflation to be in the range 1.7-2.0% (see Chart 5).²

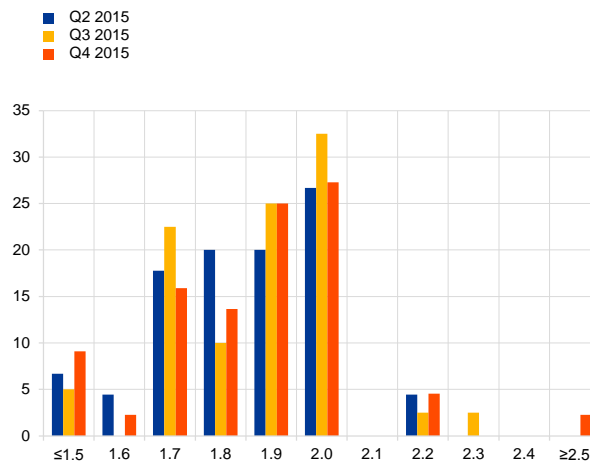
² The 90th and 75th percentiles of the distribution of the point forecasts remained unchanged at 2.0%. The 25th percentile of the distribution of the point forecasts was also unchanged at 1.70%, while the 10th percentile dropped to 1.6% (from 1.7%).

Chart 4**Outlook for longer-term inflation expectations**

(annual percentage changes)

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

(percentage of respondents)



The aggregated probability distribution was largely unchanged 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 aggregated probability distribution standing at around 1.74% compared with the mean point estimate of 1.86%. The probability of inflation being at or above 2.0% was 36%, compared with 33% in the third quarter of 2015, while that of its being below 1% was unchanged at 13% compared with the previous round. The probability of negative inflation rates remained low at 1%, slightly below the previous round.

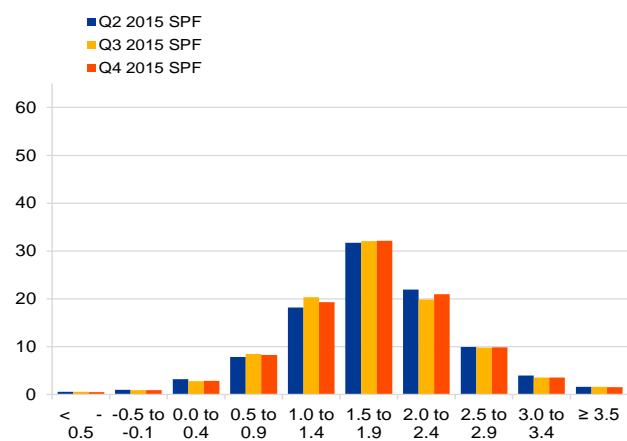
Disagreement over longer-term inflation expectations, as measured by the standard deviation of the point forecasts, was broadly unchanged compared with the previous round. This was also the case for the quasi-standard deviation – a measure which is more robust to outliers.³ The aggregate uncertainty surrounding longer-term inflation expectations, as measured by the standard deviation of the aggregated probability distribution (see Chart 7), increased slightly, reflecting a small increase in average individual uncertainty (the average standard deviation of the individual probability distributions).⁴

³ 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.

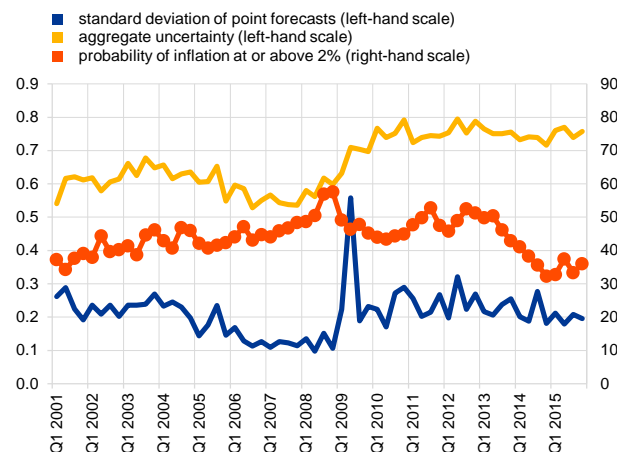
⁴ The dispersion of the aggregated probability distribution (“aggregate uncertainty”) can be decomposed into two factors: “disagreement” and average “individual uncertainty”. Disagreement is measured by the dispersion of the individual forecasts, whilst average individual uncertainty is measured by the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

Chart 6

Aggregated 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 broadly unchanged

The outlook for economic activity was largely unchanged from the previous round.

The average point forecast for real GDP growth was revised marginally upwards for 2015 to 1.5%, downwards for 2016 to 1.7% (+0.1 and -0.1 percentage point respectively compared with the previous survey round) and remained unchanged for 2017 at 1.8% (see Table). The expected upward path for the medium term is largely explained by rising growth in private consumption and investment, as the current low level of energy prices supports disposable income of households and profit margins of companies. Furthermore, respondents expect domestic demand to benefit from the accommodative monetary policy and less restrictive fiscal policies. This more optimistic outlook for domestic demand compared with the previous round outweighs the less favourable expectations for external demand in the baseline forecasts of most respondents who provided qualitative comments. Foreign demand from emerging markets, most importantly China, is expected to gradually slow down, but most respondents also still expect some support from the depreciation of the euro which has a delayed pass-through.

The average SPF point forecasts are broadly in line with the September 2015 ECB staff macroeconomic projections.

They are 0.1 percentage point above for 2015 and equal for 2016 and 2017. With regard to the latest forecasts from the Euro Zone Barometer and Consensus Economics, SPF expectations for 2015 and 2016 are in line or 0.1 percentage point below. For 2017, however, they are 0.2 percentage point higher than the latest surveys in July and April.

Chart 8

Aggregated probability distribution of 2015 GDP growth expectations

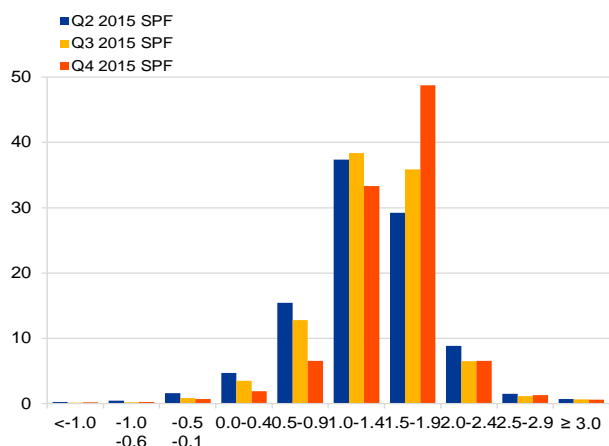


Chart 9

Aggregated probability distribution of 2016 GDP growth expectations

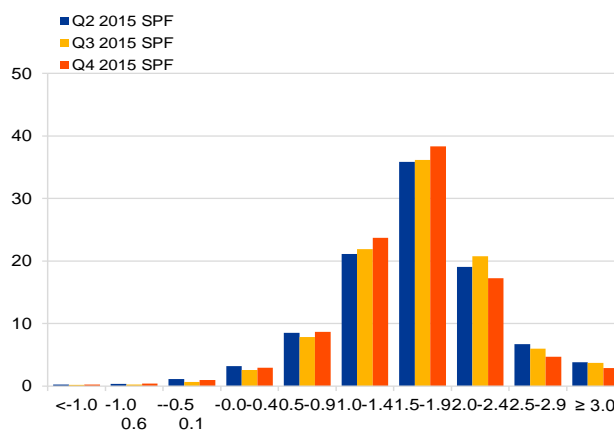


Chart 10

Aggregated probability distribution of 2017 GDP growth expectations

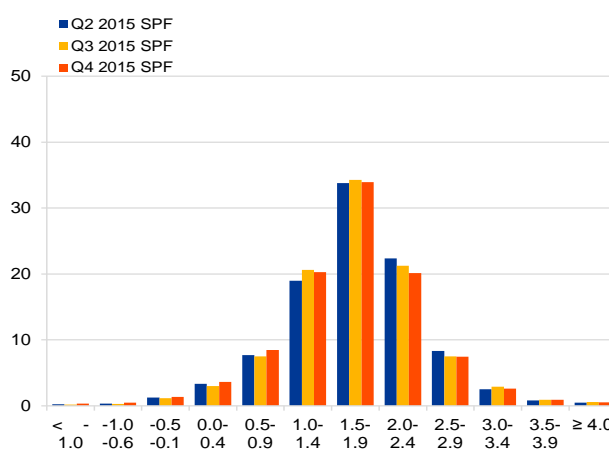
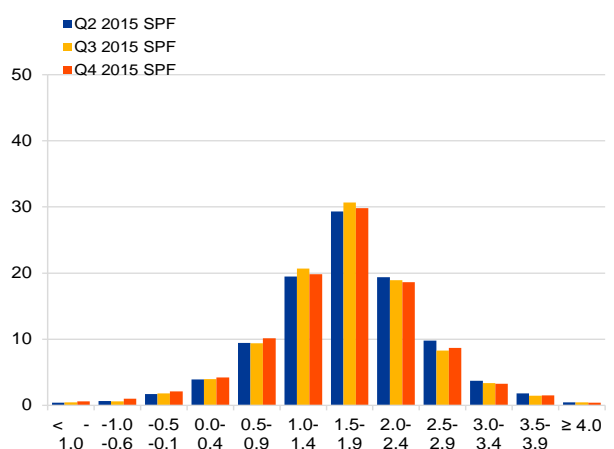


Chart 11

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



The aggregated probability distribution for 2015 has shifted towards higher outcomes, while those for 2016 and 2017 tilted very marginally towards lower outcomes (see Charts 8-10). For 2015 the highest probability (49%) is now clearly assigned to the 1.5-1.9% range. For 2016 the highest probability is assigned to the 1.5-1.9% range (38%). For 2017 the highest probability (34%) also continues to be assigned to the bin between 1.5% and 1.9%.

The balance of risks to GDP growth (as measured by the difference between the mean of the aggregated probability distribution and the average point forecast) remains tilted somewhat to the downside for all three years. The majority of the qualitative comments by the respondents reported a possibly stronger downturn in China and other emerging economies as by far the largest downside risk

surrounding their forecasts. Other downside risks mentioned relate to external factors, including a possible escalation of the geopolitical tensions between Russia and Ukraine, as well as in the Middle East, spillover effects from an interest rate hike in the United States, and more volatile global financial markets. In addition to external factors, respondents identified downside risks stemming from continuing policy uncertainty within Europe regarding the continuation of structural reforms and further integration. The few upside risks identified relate to the structural reforms in southern European countries providing a higher than assumed contribution to growth and to possible public stimulus affecting housing investment and consumption in the context of refugee/migrant inflows.

Longer-term growth expectations (for 2020) remained unchanged at 1.7%. The SPF results for that horizon remain higher than the latest available Consensus Economics and Euro Zone Barometer forecasts, which stood at 1.4% and 1.5% respectively. The aggregated probability distribution of the SPF longer-term growth expectations has become somewhat wider and, in relation to the average point forecast, suggests that respondents continue to perceive risks to be slightly on the downside (see Chart 11).

4 Unemployment rate expectations broadly unchanged

The average point forecasts for the unemployment rate currently stand at 11.0% for 2015, 10.5% for 2016 and 10.1% for 2017. Expectations remained unchanged with respect to the previous round except for a slight upward revision of 0.1 percentage point in 2017 (see Table). The expectations path remains downward sloping, the mirror image of the upward-sloping path for growth expectations. The 2015 Q4 SPF forecast for the unemployment rate is broadly in line with the September 2015 ECB staff macroeconomic projection exercise over all the horizons, being 0.1 percentage point lower in 2016. Compared with the September 2015 Consensus Economics forecasts, it stands at the same level in 2015, but is 0.1 percentage point lower for 2016. Compared with the September 2015 Euro Zone Barometer, it is the same for 2015 and 2016, but 0.1 percentage point lower for 2017.

SPF respondents perceive the balance of risks to their unemployment rate forecasts to be tilted slightly to the upside (see Charts 12-14). These upside risks are mainly related to possibly more moderate real GDP growth. Some respondents also consider the impact of labour market reforms to be potentially more limited in the short run due to delayed job creation. In addition, some panellists mentioned the current economic slowdown in emerging countries and the recent increase in immigration to be potential upward risks in the short run.

The average point forecast for longer-term unemployment rate expectations (9.2% for the reference year 2020) is 0.2 percentage point higher than in the previous SPF round. The aggregated probability distribution has not moved tangibly compared with the previous SPF round (see Chart 15). In this regard, although the bulk of the distribution has slightly shifted towards lower values, a small

number of respondents have reported relatively extreme values which have rebalanced the distribution around the average point forecast.

Chart 12

Aggregated probability distribution of the unemployment rate for 2015

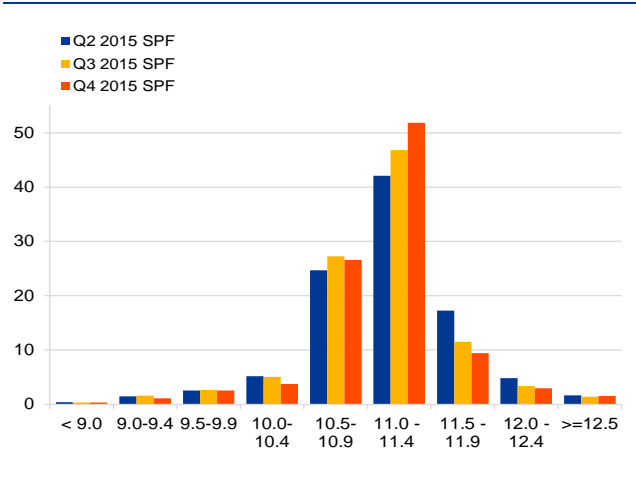


Chart 13

Aggregated probability distribution of the unemployment rate for 2016

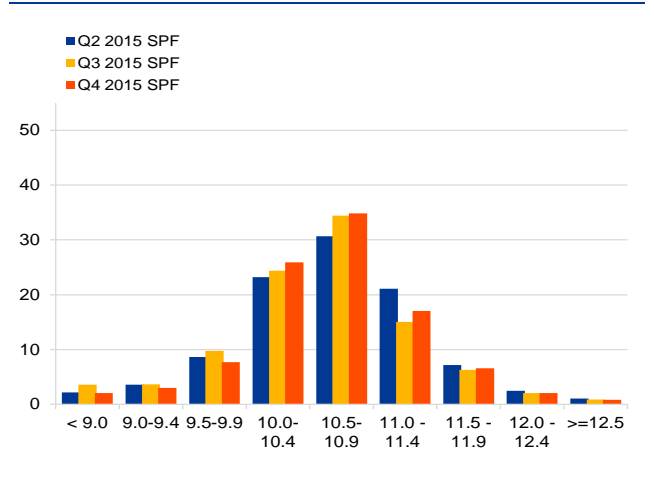


Chart 14

Aggregated probability distribution of the unemployment rate for 2017

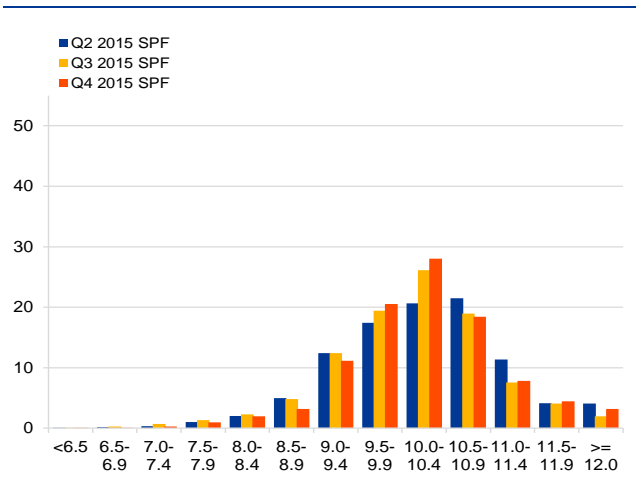
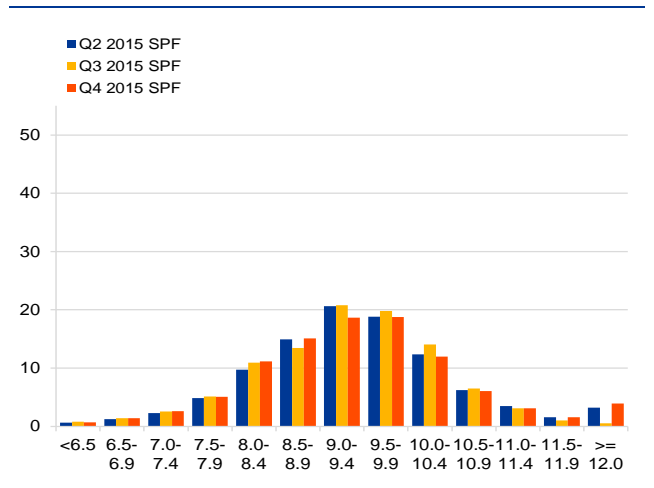


Chart 15

Aggregated probability distribution of longer-term unemployment rate expectations

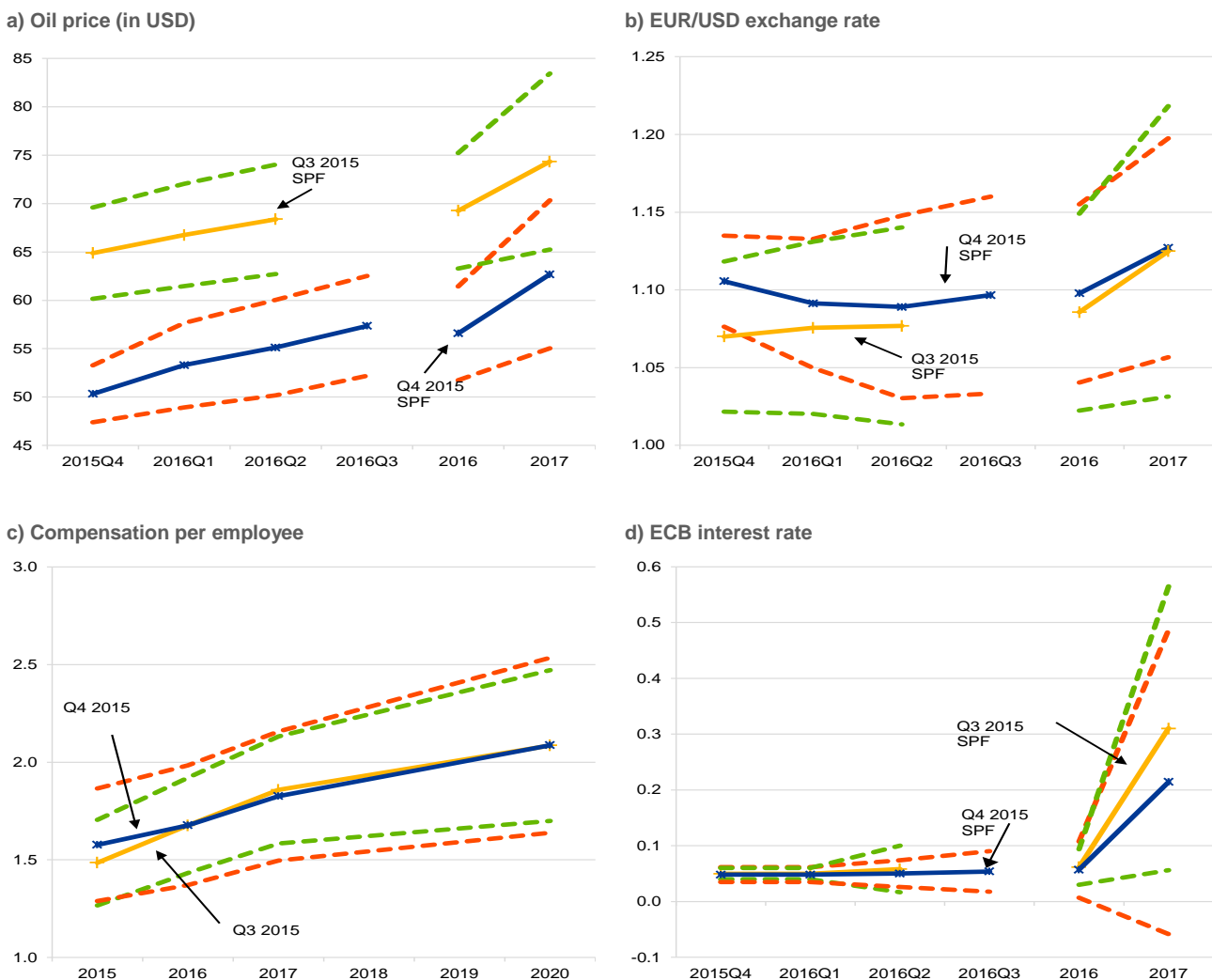


5 Other variables and conditioning assumptions

Other information provided by respondents regarding changes in their assumptions implies a large downward revision of the assumed oil prices in US dollars and a small upward revision of the USD/EUR exchange rate. Oil prices are expected to average USD 50 per barrel in the fourth quarter of 2015 and to increase to USD 57 in the third quarter of 2016 and to levels around USD 63 in

2017. Compared with the previous survey round, oil price assumptions are around 20% lower up to Q3 2016 and 15% lower in 2017 (see Chart 16a). The expected path for the EUR/USD exchange rate (decreasing initially from around 1.11 in Q4 2015 to 1.09 by Q2 2016, but rising thereafter) is slightly higher than in the previous SPF (see Chart 16b). The combination of the assumptions for oil prices in US dollar terms and the EUR/USD exchange rate implies that oil prices in euro terms are also lower.

Chart 16
Underlying assumptions



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

Expectations regarding the growth rate of compensation per employee and for the short-term interest rate remained relatively stable compared with the previous round. The profile of the annual growth in compensation per employee is 1.6% for 2015, 1.7% for 2016, 1.8% for 2017 and 2.1% for 2020 (see Chart 16c). The mean assumption for the rate on the Eurosystem's main refinancing operations is that it will stand at 0.05% throughout 2015, but then edge upwards to 0.06% in

2016 (see Chart 16d). Forecasters expect an increase to 0.21% in 2017 (compared with 0.31% in the previous round).

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ISSN 2363-3670 (online)
EU catalogue number QB-BR-15-004-EN-N (online)