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European Business Cycle Indicators

1st Quarter 2020

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European Commission
Directorate-General for Economic and Financial Affairs

European Business Cycle Indicators

1st Quarter 2020

Special topic

- A closer look at the drivers of the Economic Sentiment Indicator.

This document is written by the staff of the Directorate-General for Economic and Financial Affairs, Directorate A for Policy, Strategy and Communication, Unit A3 - Economic Situation, Forecasts, Business and Consumer Surveys (http://ec.europa.eu/info/business-economy-euro/indicators-statistics/economic-databases/business-and-consumer-surveys_en).

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- The Economic Sentiment Indicators (ESI) for the euro area (EA) and the EU began the first quarter of 2020 on an upbeat note, booking solid increases in January and February after some two years of broadly declining readings. The tentative recovery, however, came to an abrupt halt in March, when coronavirus struck and sentiment plummeted as much as never before in a single month (EA: −8.9, EU: −8.2 points).
- Losing 6.4 (EA) and 6.2 (EU) points over the quarter, i.e. between December 2019 and March 2020 - the heftiest quarterly losses since the sovereign debt crisis - both indicators fell firmly below their long-term average of 100. The indicators' current levels of 94.5 (EA) and 94.8 (EU) points were last seen in 2013, during the recovery following the sovereign debt crisis.
- The spread of coronavirus and its accompanying containment measures also determined the evolution of the new Employment Expectations Indicator (EEI), which posted the sharpest decline on record (EA: −10.9, EU: −9.7) after the first two months of the year had seen a continuation of the broad sideways movement already witnessed in 2019-Q4.
- Confidence in services and retail trade dropped sharply and settled at levels well below long-term averages, reflecting the immediate impact of governments' confinement measures on businesses in those sectors. Also consumer morale took a sizeable hit, bringing the indicator back to its long-term average which it had exceeded since late 2014. By contrast, industry and construction confidence posted more contained losses, with the latter remaining at historically high levels, while industry confidence continued to undercut its long-term average.
- Focussing on the six largest EU economies, by far the starkest quarterly losses were registered in Italy (−17.8), Poland (−7.2) and Germany (−7.1), while the slide in sentiment was less severe in Spain (−3.4), the Netherlands (−2.3) and France (−0.8).
- While the decrease of the indicators in March is historically unprecedented in many cases, it is important to note that this is not yet reflecting the full impact of the crisis. Most responses to the March wave of the surveys were collected before significant containment measures were enacted in almost all EU countries.

Special topic: A closer look at the drivers of the Economic Sentiment Indicator

The Economic Sentiment Indicator (ESI) is, roughly speaking, an economy-wide summary of the five sector-specific confidence indicators. As such, the indicator can be broken down into contributions by sectors or component questions. The contribution of, e.g., one sector is a combination of that sector's weight in the overall indicator and the strength of the cyclical component in that sector. This special topic presents such decompositions and illustrates how they can be used to understand the main cyclical drivers of the ESI at different points in time, including during the collapse of sentiment in March 2020 due to the corona crisis. The second part presents a decomposition of the euro-area ESI into contributions by country. It illustrates how Germany, France, Italy and Spain together summarise more than 99% of all developments in the ESI for the euro area, although accounting for only 75% of the total weight.

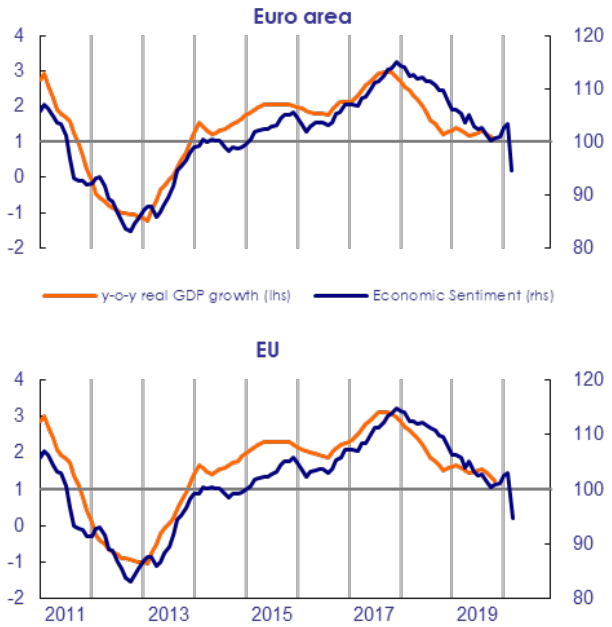
1. RECENT DEVELOPMENTS IN SURVEY INDICATORS

1.1. EU and euro area

The present edition of the European Business Cycle Indicators (EBCI) reports on developments in survey data over the first quarter of 2020. Paying tribute to the spreading of coronavirus across the continent and the prime interest in quantifying its economic fallout, the report highlights in particular the results of the surveys conducted in March, i.e. in the first month that saw far-reaching confinement measures in almost all EU Member States. As most of those measures were enacted towards the middle of the month though, while the bulk of the survey responses were collected in the first half, it should be cautioned that even the March results do not capture the full extent of the corona crisis[1] and only provide a glimpse of the deterioration which is likely to show up in the April data.

The Economic Sentiment Indicators (ESI) for the euro area (EA) and the EU began the first quarter of 2020 on an upbeat note, booking solid increases in January and February after some two years of broadly declining readings. The tentative recovery, however, came to an abrupt halt in March, when coronavirus struck and sentiment plummeted as much as never before in a single month (−8.9/−8.2 points in the EA/EU). Losing 6.4 (EA) and 6.2 (EU) points over the quarter, i.e. between December 2019 and March 2020 - the heftiest quarterly losses since the sovereign debt crisis - both indicators fell firmly below their long-term average of 100. The indicators' current levels of 94.5 (EA) and 94.8 (EU) points were last seen in 2013, during the recovery following the sovereign debt crisis.

Graph 1.1.1: Economic Sentiment Indicator



Note: The horizontal line (rhs) marks the long-term average of the survey indicators. Confidence indicators are expressed in balances of opinion and hard data in y-o-y changes. If necessary, monthly frequency is obtained by linear interpolation of quarterly data.

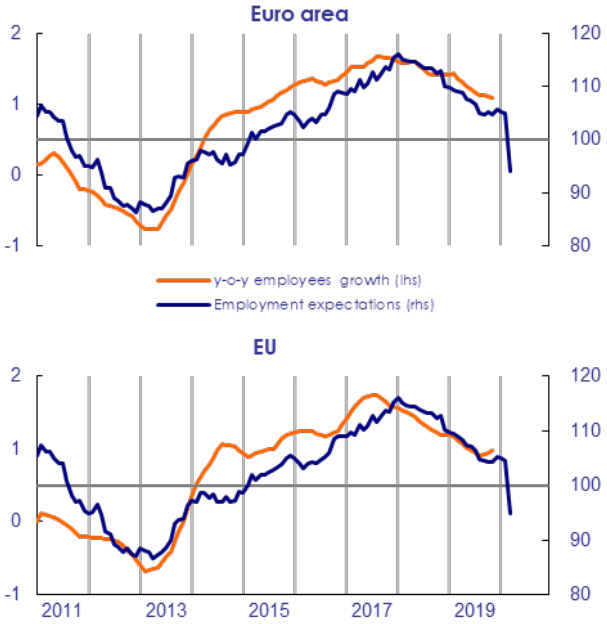
The spread of coronavirus and its accompanying containment measures also determined the evolution of the new Employment Expectations Indicator (EEI)[2], which posted the sharpest decline on record (−10.9 in the EA and −9.7 in the EU) after the first two months of the year had seen a continuation of the broad sideways movement already witnessed in 2019-Q4. In both regions,

[1] Across all surveyed sectors, the average share of responses collected before significant confinement measures were taken was at 50-70% in BE, CY, CZ and MT, at 71-85% in DE, DK, EL, ES, HU, IT and LT, at 86-95% in AT, BG, EE, FI, NL, PT, SK and SE and at more than 95% in FR, HR, IE, PL and RO. No information on the share of early responses is available for LU, LV and SI.

[2] The new indicator has been presented in the 2019-Q4 special topic of the European Business Cycle Indicators publication (see also the Methodological User Guide to the Joint Harmonised EU Programme of Business and Consumer Surveys, p. 22, for a description of the EEI).

the indicator is now firmly below its long-term average of 100 (at 94.1 in the EA and 94.8 in the EU), at levels last seen in 2013. Zooming into the sectoral components of the indicator, (see Graphs 1.1.5 and 1.1.7 below) employment plans in March were in free fall in services and retail trade, while the losses were much more contained in industry and construction.

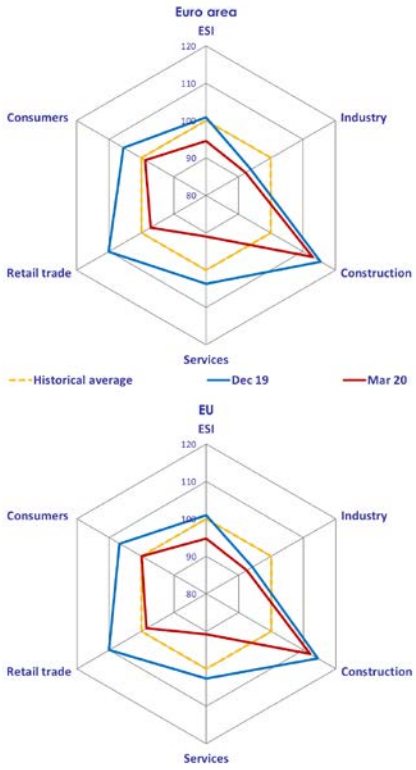
Graph 1.1.2: Employment expectations indicator



The ESI's free fall in March was perfectly in line with developments in other survey-based bellwethers for the EA/EU. Markit Economics' PMI Composite Output Index posted the largest monthly collapse in business activity on record. Although superlatives are hard to compare, the fall in the PMI was even much sharper than in the ESI and,[3] importantly, the PMI's current level is lower than it ever was during the Great Financial Crisis. The latter does not hold true for the ESI, which is "only" as low as it was in the recovery phase following the sovereign debt crisis. The difference is due to the data collection phase which started later in the case of the PMI (12 March) so that the indicator contains, depending on the country, no or only a low fraction of answers collected prior to Member States' confinement measures. The results of the PMI thus suggest that the ESI is in for another historic slide in April.

The ESI's slide also chimes with the March results of the Ifo Business Climate Index for Germany, which posted the sharpest decline since the German reunification, bringing sentiment to its lowest level since the summer of 2009.

Graph 1.1.3: Radar Charts



Note: A development away from the centre reflects an improvement of a given indicator. The ESI is computed with the following sector weights: industry 40%, services 30%, consumers 20%, construction 5%, retail trade 5%. Series are normalised to a mean of 100 and a standard deviation of 10. Historical averages are generally calculated from 2000q1. For more information on the radar charts see the Special Topic in the 2016q1 EBCI.

Looking at the sectoral drivers of the ESI's slump (see Graph 1.1.3), there are clearly two "camps". On the one hand, confidence in services and retail trade dropped sharply (technically speaking, by more than one standard deviation) and settled at levels well below long-term averages, reflecting the immediate impact of governments' confinement measures on businesses in those sectors (think of closed restaurants and non-food stores). Also consumer morale took a hit of almost one standard deviation, bringing the indicator back to its long-term average which it had exceeded since late 2014. On the other hand, industry and construction confidence posted more

[3] Technically speaking, the fall corresponded to about five standard deviations vs. about one in the case of the ESI.

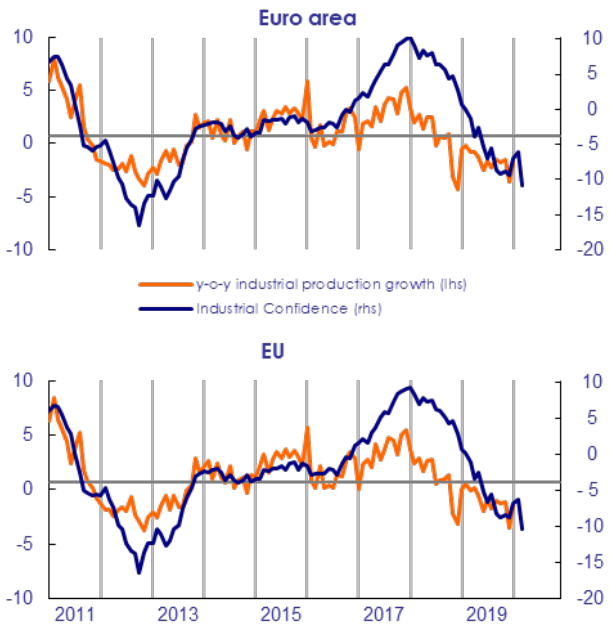
contained losses, with the latter remaining at historically high levels, while industry confidence continued to undercut its long-term average.

Focussing on the six largest EU economies, by far the starkest quarterly losses were registered in Italy (−17.8), Poland (−7.2) and Germany (−7.1), while the slide in sentiment was less severe in Spain (−3.4), the Netherlands (−2.3) and France (−0.8).

Sector developments

EA/EU **industry confidence** began the year on a positive note. The combination of a flat profile in 2019-Q4 and solid gains in January and February boded well for the sector, which had been in decline for some two years. The tentative recovery, however, halted abruptly in March when Member States were forced to enact far-reaching confinement measures to combat the spread of coronavirus. Confidence in March shed 4.6 points in the EA and 4.2 points in the EU, in both cases the strongest decline since the peak of the Great Financial Crisis. Given the gains in January and February, the losses on the quarter remained relatively moderate though, at −1.5 (EA) / −1.6 (EU) points. Both indicators are currently at levels well below their respective long-term averages (see Graph 1.1.4).

Graph 1.1.4: Industry Confidence indicator

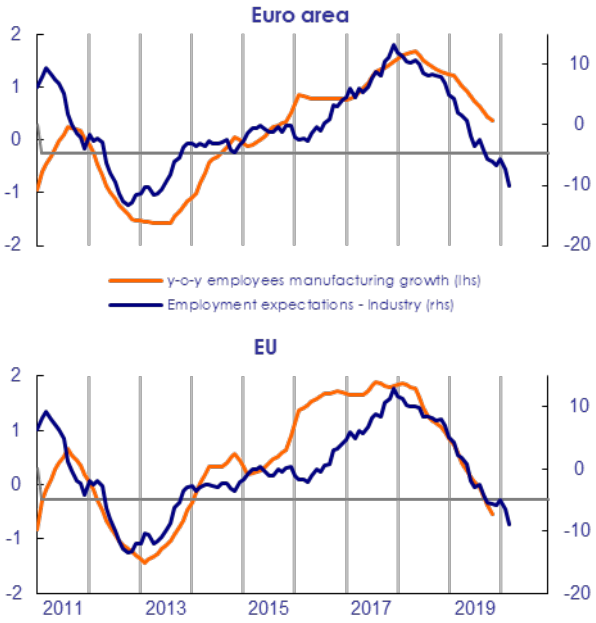


Zooming into the individual components of EA/EU industrial confidence, the shattering results of March and the (more moderate) quarterly losses were entirely due to dramatically lower production expectations. In both the EA and EU, production expectations saw the largest monthly decline on record, as well as the largest quarterly decline since the peak of the Great Financial Crisis. While managers' appraisals of the stock of finished products also changed dramatically on the quarter, with an increasing share of managers qualifying their stocks as too low (probably a reflection of interruptions in supply chains), the survey question enters the calculation of industry confidence with an inverted sign and thus fended off the actual loss in confidence. Managers' assessments of order books showed no remarkable reaction to March's corona confinement measures.

Of the components not included in the confidence indicator, managers' views on past production improved on the quarter, while their appraisals of export order books deteriorated mildly.

In line with EA/EU managers' dramatically lower production expectations, both their selling price and **employment expectations** (see Graph 1.1.5) worsened, but to a much lesser extent.

Graph 1.1.5: Employment expectations in Industry



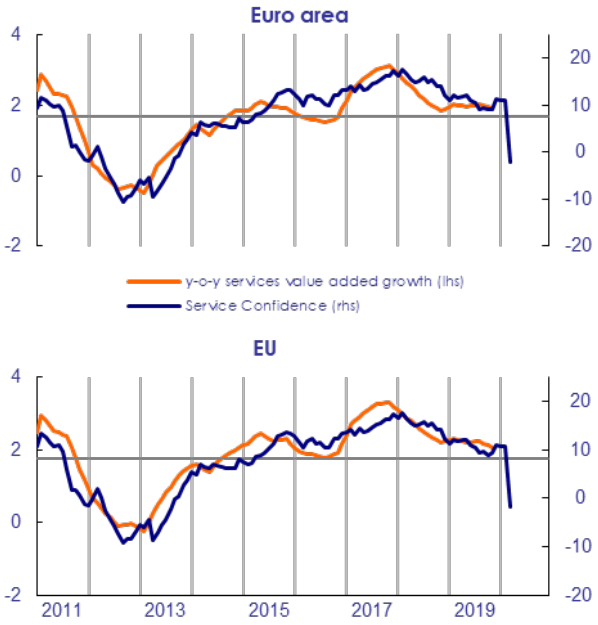
Among the six largest EU Member States, industry confidence saw the largest quarterly slumps since the Great Financial Crisis in Italy

(−9.6) and Poland (−5.5). Significant losses were also booked in Spain (−4.4) and the Netherlands (−2.2), while Germany (−0.7) saw only a slight deterioration on the quarter. France stood out with a 2.2-point increase in confidence (owing to increases in January and February).

According to the quarterly manufacturing survey (carried out in January, i.e. before the corona crisis), **capacity utilisation in manufacturing** remained broadly unchanged in both the EA and the EU (−0.1 points) compared to the last survey wave of October. Both indicators were at 80.9% in January, very close to their long-term averages of 81.0% (EA) and 80.8% (EU).

After a rebound in 2019-Q4, **services confidence** went sideways in the first two months of 2020, nurturing hopes that the sector's broad decline since the onset of 2018 had come to an end. The spread of coronavirus on the continent and the far-reaching confinement measures taken in the course of March changed the picture dramatically. Registering the sharpest monthly fall on record, services confidence shed 13.5 (EA) / 12.5 (EU) points on the quarter, which corresponded to the biggest quarterly loss since the peak of the Great Financial Crisis and clearly identified the sector as the hardest hit by the confinement measures (together with retail trade). In both the EA and the EU, the level of services confidence is now firmly below the indicators' respective long-term averages, in regions last seen in the immediate aftermath of the sovereign debt crisis (see Graph 1.1.6).

Graph 1.1.6: Services Confidence indicator



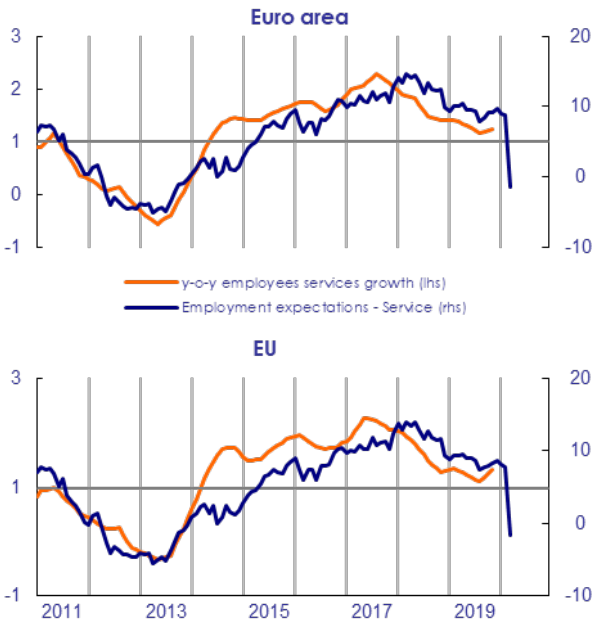
In line with industry managers, EA/EU services executives posted the sharpest declines in respect of their expectations, with demand expectations collapsing by the highest margin on record. The deteriorations in appraisals of past demand and the past business situation, while also sharp, were somewhat less pronounced.

Employment expectations in services plummeted in both the EA and the EU as much as last time in the midst of the Great Financial Crisis (see Graph 1.1.7), the same holding true for managers' selling price expectations.

Focussing on the six largest EU economies, 2020-Q1 brought the strongest quarterly decline on record in Italian (−23.4) and the sharpest one since 2001 in German (−17.8) services confidence. By comparison, the losses, though substantial, were more muted in Spain (−9.0), the Netherlands (−5.8), France (−5.7) and Poland (−5.1).

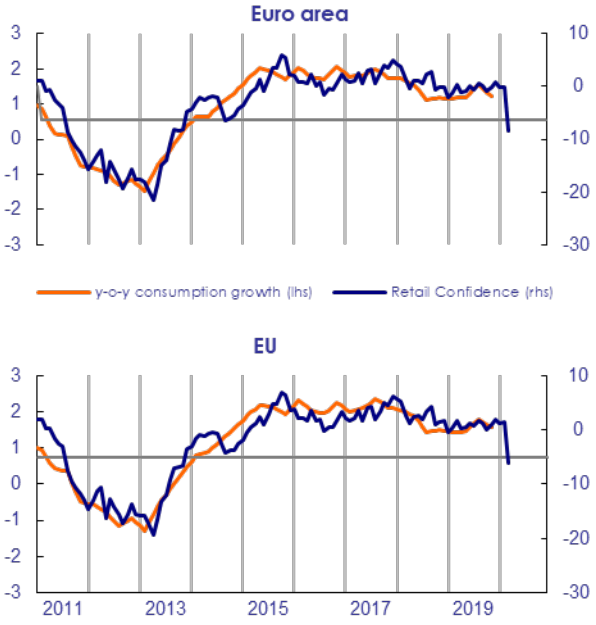
Capacity utilisation in services, as measured by the quarterly survey conducted in January, edged up in the EA (+0.1) and the EU (+0.2 points). At 90.3% (EA) / 90.5 (EU), the rates were moderately above their respective long-term averages (as calculated from 2011 onwards) in January.

Graph 1.1.7: Employment expectations in services



Reflecting the confinement measures targeting non-food stores in most of Europe, **retail trade** turned out to be the business sector hardest hit by the corona crisis (together with services). March brought the biggest slump in retail trade confidence in some twenty years, sending the EA/EU indicator down 9.0 / 7.9 points and below long-term average for the first time since 2014 (EA) / 2013 (EU) (see Graph 1.1.8).

Graph 1.1.8: Retail Trade Confidence indicator



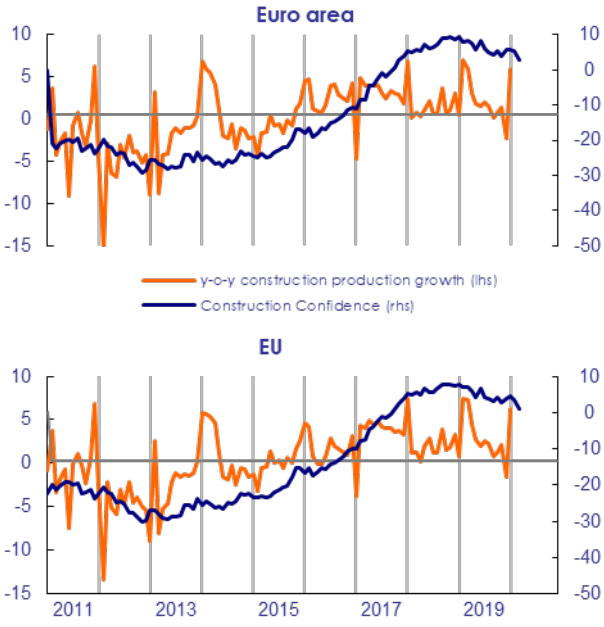
As in industry and services, managers' rampant concerns related mainly to future developments with expectations in respect of the future business situation collapsing as much as never before. The assessments of the level of stocks remained broadly unchanged, while the appraisals of the past business situation clouded over.

For the six largest EU economies, confidence posted the largest decline on record in Germany (−14.7) and the strongest one since the sovereign debt crisis in Italy (−11.6). Losses in France (−5.3), Spain (−5.1) and Poland (−2.2) were of less extraordinary magnitude. The Netherlands (+0.7) bucked the trend with a moderate increase in confidence, owing to increases in the beginning of the year.

Construction confidence posted a comparatively mild deterioration by 3.0 (EA) / 2.8 (EU) points. In both regions, the indicator stayed at historically high levels, far above its long-term average (see Graph 1.1.9).

At component level, managers' views on order books, and, more so, their **employment expectations** clouded over.

Graph 1.1.9: Construction Confidence indicator

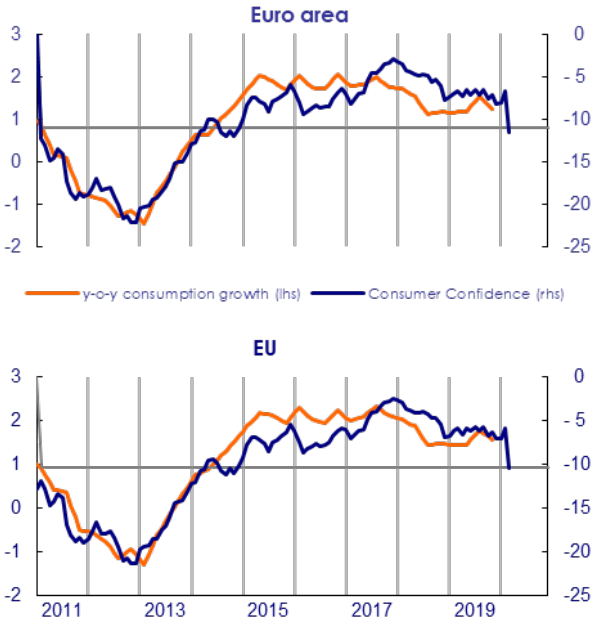


Among the six largest EU economies, construction confidence was hardest hit in Germany (−7.1), followed by France (−4.0), Italy (−2.9), Poland (−2.2) and the Netherlands (−2.0). Confidence in Spain stemmed the tide, gaining 3.4 points on the quarter due to a marked increase recorded in January.

Due to the highest (EA) / second highest (EU) monthly decline on record in March, **consumer confidence** lost 3.5 (EA) / 3.4 (EU) points on the quarter. For the first time since 2014, the indicator in both regions fell below its long-term average (see Graph 1.1.10).

A glance at the individual components underlying the indicator shows that EA/EU consumers' concerns focussed on the general economic situation, rather than their personal finances: While their views on the future general economic situation deteriorated as much as last time during the sovereign debt crisis, consumers' appraisals of their past and future personal financial situation, as well as their intentions to make major purchases worsened to a much lesser extent.

Graph 1.1.10: Consumer Confidence indicator

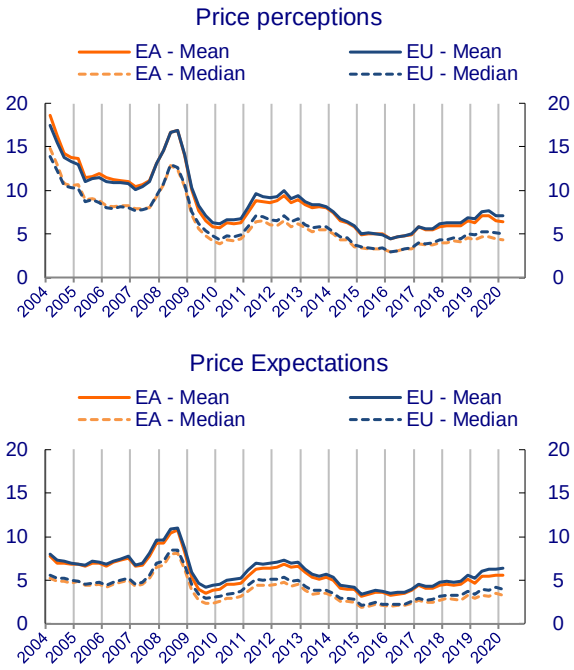


Consumer sentiment took the hardest hit in Italy (−7.0), followed by Germany (−3.9), France (−2.6), Poland (−1.3) and the Netherlands (−0.7). Spain bucked the trend, with confidence gaining 0.5 points on the quarter due to improvements recorded in early 2020.

In the EA, the mean and median of **consumers' quantitative price perceptions** eased slightly in 2020-Q1 compared to 2019-Q4. The same held true for EU consumers' median price perceptions, while their mean perceptions stayed unchanged. As regards consumers' price expectations, the mean score at EA-level remained unchanged, while the median weakened somewhat. At EU-level, mean expectations firmed slightly, while median expectations saw a mild easing (see Graph 1.1.11).[4]

More detailed results, broken down by different socio-economic groups, are available in tables A.1.1 and A.1.2 of the Annex to section 1.

Graph 1.1.11: Euro area and EU quantitative consumer price perceptions and expectations

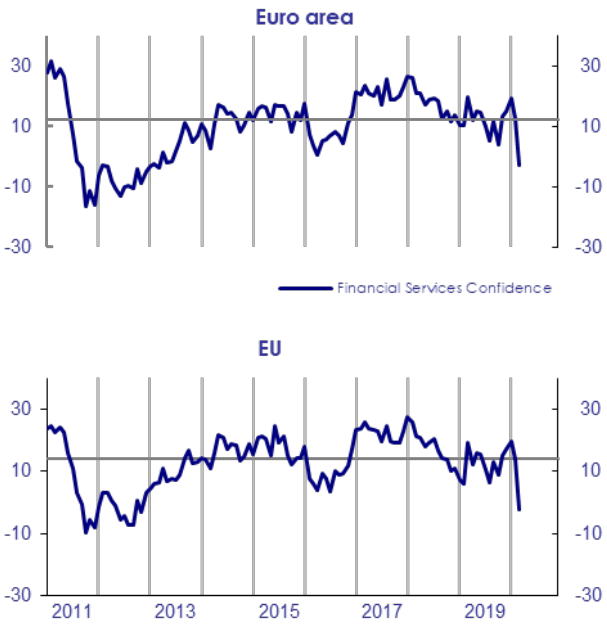


The **financial services confidence** indicator (not included in the ESI) shed 17.8 (EA) / 19.1 (EU) points on the quarter, in both cases corresponding to the largest quarterly drop since the sovereign debt crisis. The latest evolution of the indicators brought them significantly below their respective long-term averages (see Graph 1.1.12).

Taking a look at the individual components underlying the indicator, vanishing confidence emerges as a broad phenomenon, reflected in managers' assessments of past demand and the past business situation just as much as in their expectations for future demand.

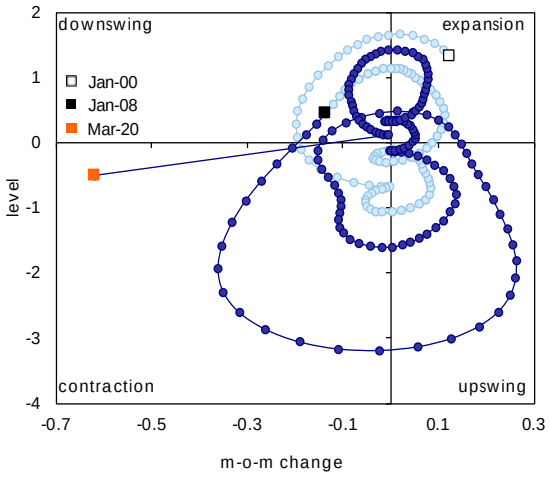
[4] For more information on the quantitative inflation perceptions and expectations, see the special topic in the previous EBCI 2019Q1.

Graph 1.1.12: Financial Services Confidence indicator



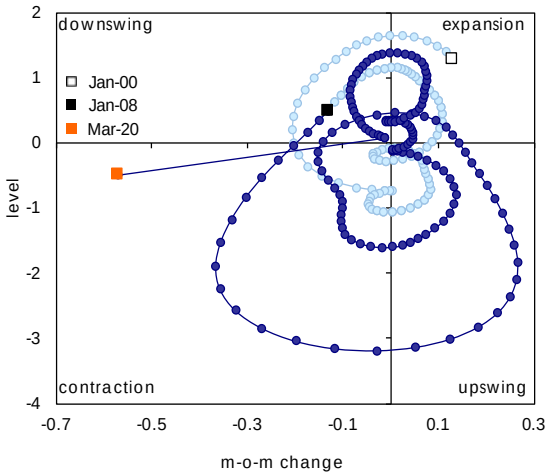
In line with the sudden and historic deterioration in overall sentiment in 2020-Q1, both the EA and the EU **climate tracers** (see Annex for details) rushed to the quadrant signalling economic contraction (see Graphs 1.1.13 and 1.1.14).[5]

Graph 1.1.13: Euro area Climate Tracer



With the exception of construction, the dedicated climate tracers for all surveyed sectors (see Graph 1.1.15) saw a forceful deterioration in both the EA and the EU. The tracers either jumped deeper into the downswing (consumers) or straight into the contraction (industry, retail trade, services) quadrant.

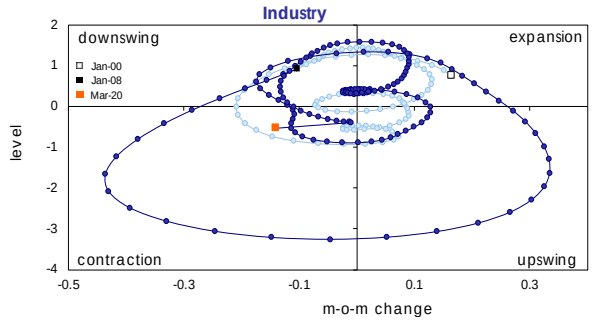
Graph 1.1.14: EU Climate Tracer

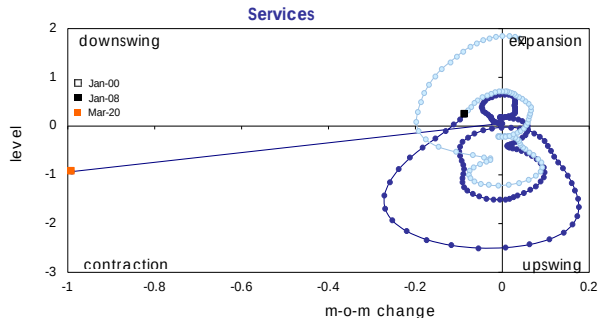


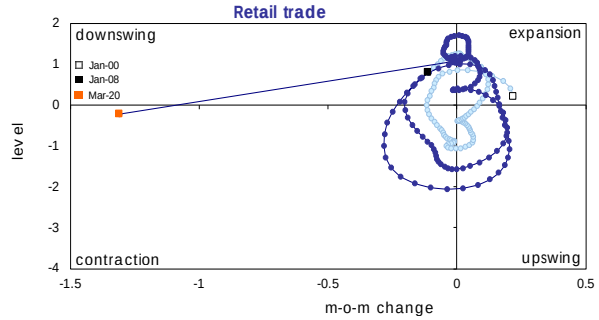
[5] To avoid that the recent sudden declines in the indicators are smoothed out by averaging with pre-crisis observations, the observations for March, unlike all previous observations, have not been run through the usual HP filter. This applies to all climate tracer graphs in this edition.

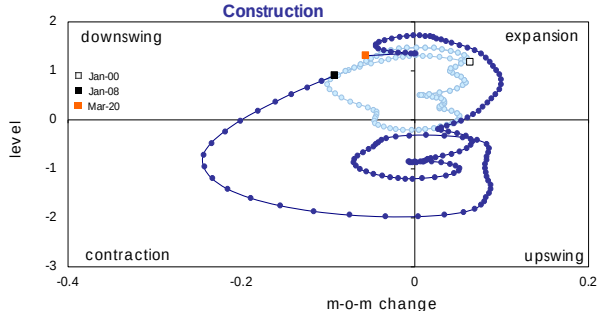
Graph 1.1.15: Economic climate tracers across sectors

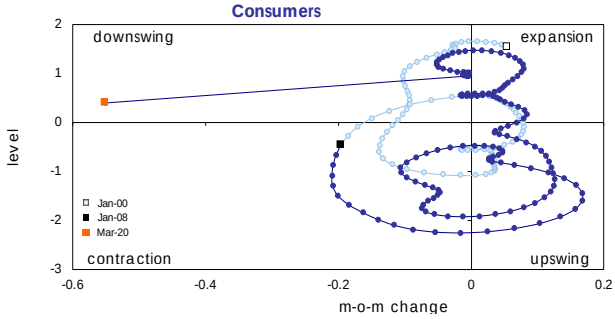
Euro area



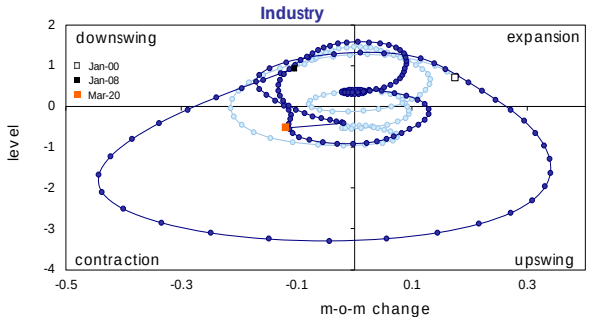


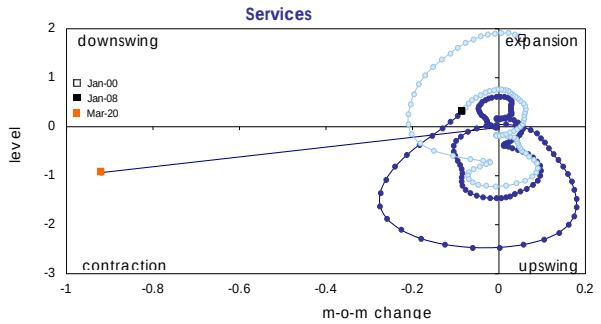


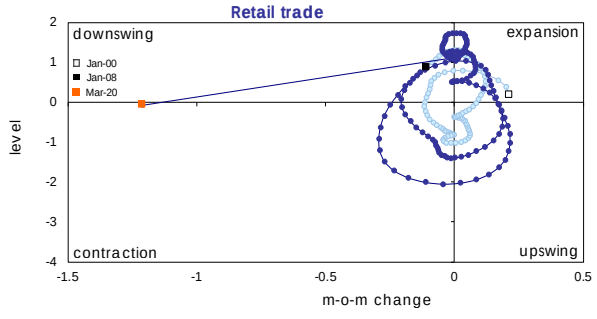


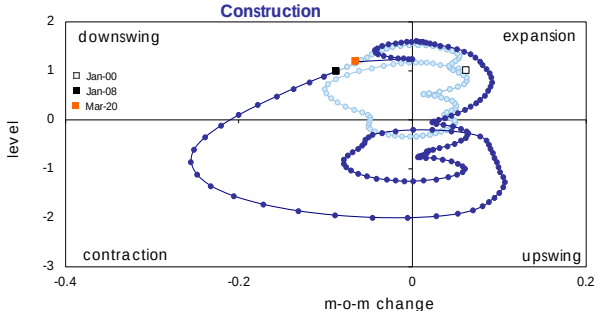


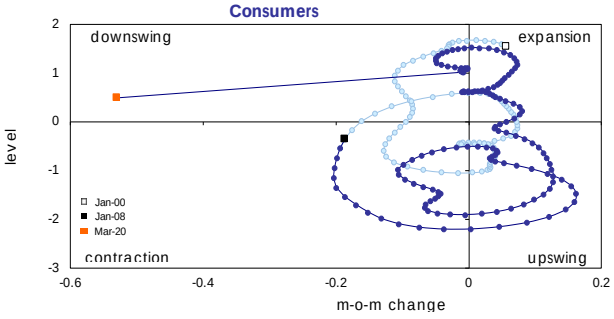
EU











1.2. Selected Member States

Over 2020-Q1 (March compared to December 2019), sentiment plummeted in Italy (−17.8), Germany (−7.1) and Poland (−7.2). Less strong declines were registered in Spain (−3.4) and the Netherlands (−2.3). In France, due to sizeable increases in January and February, the decline in the ESI over the quarter remained limited (−0.8). Overall, the less dramatic decreases in the latter three countries are attributable to the fact that, in March, a very high percentage of the replies were collected before strict confinement measures were taken to combat the spread of the coronavirus in these countries.

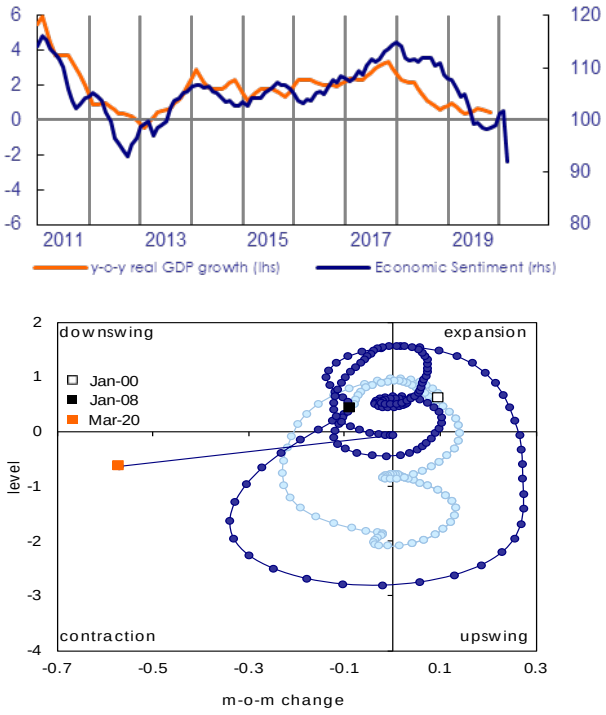
Compared with the end of 2019, sentiment In **Germany** lost 7.1 points over the first quarter of 2020. The upward trend visible since the end of 2019 was interrupted briskly in March, when sentiment plunged by 9.8 points compared to February, dragging the ESI down to 92.0 points, markedly below the long-term average of 100. In addition, around 70% of replies from managers and close to 100% of replies from consumers were collected before stringent measures were taken in Germany, suggesting that the decline is not yet reflecting the full impact of the crisis.

The sudden deterioration of survey results projected the German economy deep into the contraction quadrant of the climate tracer (see Graph 1.2.1).[6]

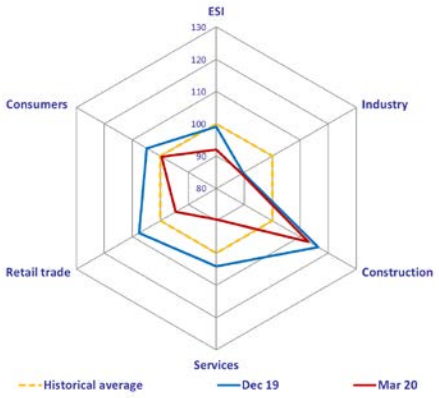
Also the Employment Expectations Indicator (EEI) dived (−10.4 points in March compared to December 2019), reflecting significantly worsened employment plans across all four business sectors, led by services, retail trade, and construction.

From a sectoral perspective, confidence tumbled in services and retail trade, the two sectors that were most hit in March. Confidence fell markedly also in construction and among consumers. By contrast, confidence in industry still remained broadly stable at the December level, since the March decrease was partly offset by improvements registered in January and February. Confidence indicators for industry, services and retail trade are now scoring (markedly) below their long-term averages. By contrast, confidence among consumers is still scoring at its long-term average and construction confidence is still well in excess of it (see Graph 1.2.2).

Graph 1.2.1: Economic Sentiment Indicator and Climate Tracer for Germany



Graph 1.2.2: Radar Chart for Germany



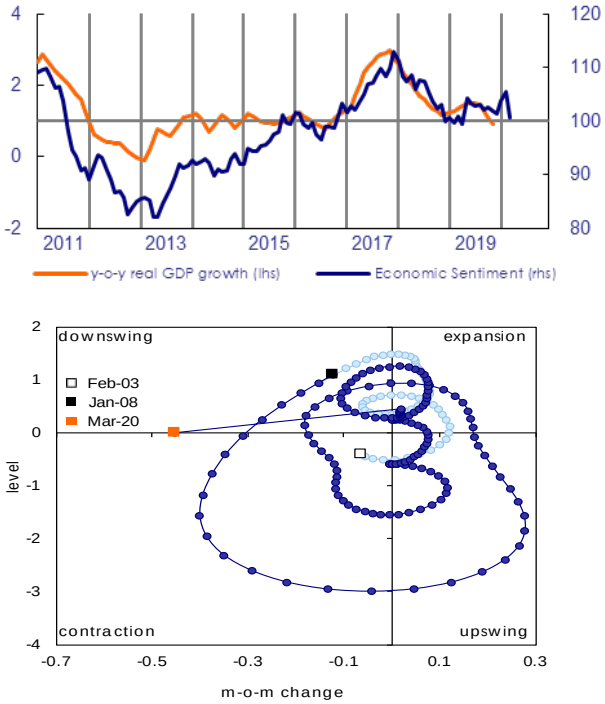
In **France,** where 98% of business and consumer survey responses were collected before strict confinement measures were taken, the marked decline registered in March (−4.9

[6] The March observations of all climate tracers have not been smoothed (filtered), see footnote 5.

compared to February) erased the improvements recorded in January and February. As a result, the ESI declined only mildly (−0.8) compared to the level reached at the end of 2019-Q4. At 100.6 points, the indicator remains above its long-term average of 100.

Based on the latest sentiment data, the French climate tracer rushed to the border between the downswing and contraction quadrants (see Graph 1.2.3).

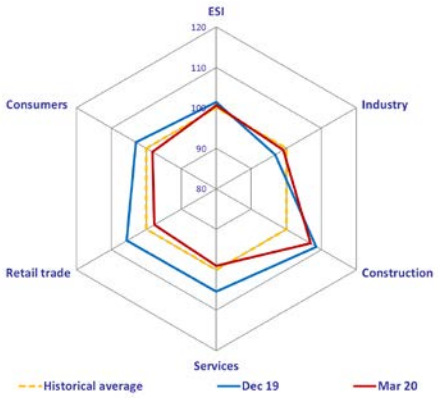
Graph 1.2.3: Economic Sentiment Indicator and Climate Tracer for France



The EEI plummeted (−10.1 points in March compared to December 2019), due to substantially worsened employment plans across all four business sectors, in particular in services and retail trade.

A look at the French radar chart (see Graph 1.2.4) reveals that stable overall sentiment is resulting from improving confidence among managers in the manufacturing industry sector, which almost offset important decreases registered in services, retail trade, among consumers, and, to a lesser degree, construction. Contrary to all other sectors, confidence in construction continued to largely exceed its long-term average.

Graph 1.2.4: Radar Chart for France

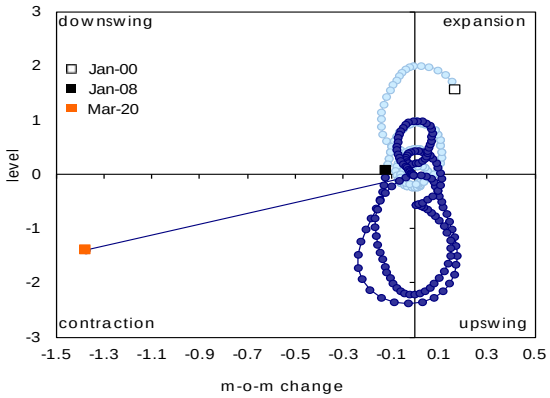


Sentiment in **Italy** plummeted (−17.8), due to the strongest monthly decline in March since the ESI is available (1985). Still, it has to be noted that nearly 60% of consumers and around 80% of managers were interviewed before strict confinement measures were taken. At 83.7 points, the indicator is deeply below its long-term average of 100. In line with the crashing sentiment indicator, the Italian climate tracer was catapulted deeply into the contraction area (see Graph 1.2.5).

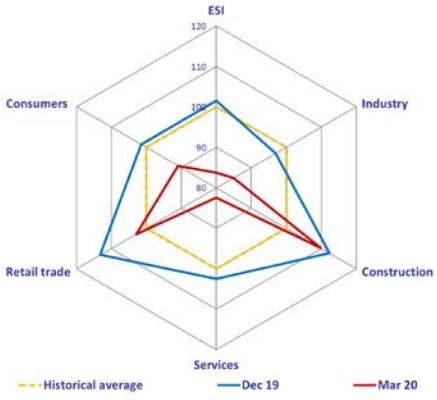
Also the Italian EEI collapsed (−14.4 points in March compared to December 2019), reflecting significantly worsened employment plans across all four business sectors, in particular in services.

A look at the Italian radar chart (see Graph 1.2.6) shows abrupt confidence declines in all sectors except for construction, where confidence worsened to a lesser extent. The fall was particularly striking in services. Confidence levels are far below their long-term averages for industry, services and consumers, while remaining above average in retail trade and construction.

Graph 1.2.5: Economic Sentiment Indicator and Climate Tracer for Italy

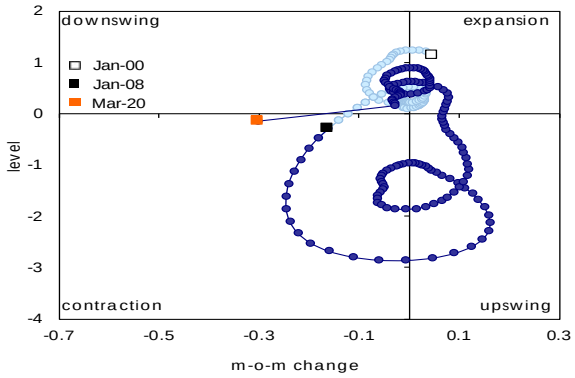


Graph 1.2.6: Radar Chart for Italy



In **Spain**, where slightly more than 90% of consumers and around 80% of the enterprises replied before strict measures were taken, sentiment decreased strongly (−3.4) over the quarter. The current score (99.3) stays close to the indicator's long-term average of 100. Mirroring the recent developments, the Spanish climate tracer jumped from the downswing into the contraction area (see Graph 1.2.7).

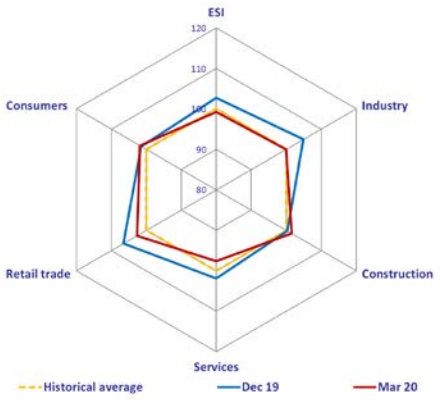
Graph 1.2.7: Economic Sentiment Indicator and Climate Tracer for Spain



The Spanish EEI decreased sharply (−5.5 points in March compared to December 2019), mirroring marked declines in employment plans across all business sectors, except for construction, where the marked decline registered in March was offset by two strong increases in January and February.

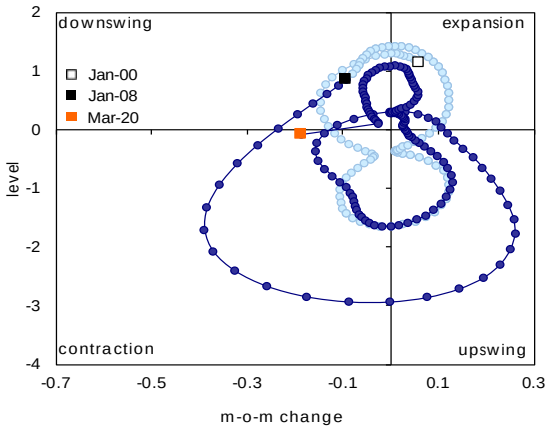
As shown in the radar-chart (see Graph 1.2.8), lower confidence resulted from important decreases registered in industry, services and retail trade. Compared to December, confidence remained stable among consumers and improved in construction. These results are explicable by increases registered at the beginning of the year, which were only partly offset by the drop in March. Except for confidence in services, which is now below its long-term average, the indicators in the other sectors remain slightly above or at their respective long-term averages.

Graph 1.2.8: Radar Chart for Spain



In the **Netherlands**, where around 95% of consumers and slightly more than 80% of managers were interviewed before strict measures were taken to combat the spread of the coronavirus, sentiment worsened over the first quarter of 2020. The 2.3 points loss over the quarter resulted from a strong decline registered in March (−4.0) that offset a marked increase recorded in February. At 98.2, the ESI moved slightly below its long-term average of 100. The latest decline pushed the Dutch climate tracer beyond the border between the downswing and the contraction quadrants (see Graph 1.2.9).

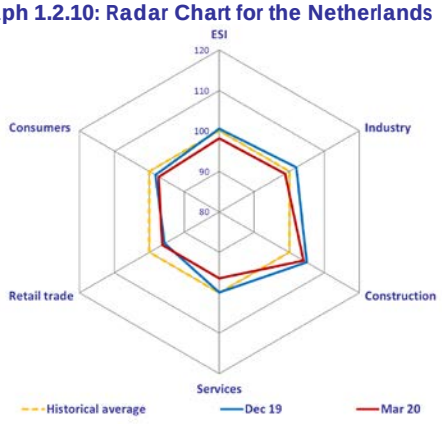
Graph 1.2.9: Economic Sentiment Indicator and Climate Tracer for the Netherlands



Also in the Netherlands, the EEI declined markedly (−4.8 points in March compared to December 2019), due to strong declines in managers' employment plans across all four business sectors, in particular in the retail trade and services sectors.

Over the quarter, sentiment deteriorated strongly in services and, less so, in industry and construction. By contrast, confidence among consumers and in retail trade remained broadly stable. In both cases, the decreases of March only partly offset the improvements registered at the beginning of the year. Confidence is below long-term average among consumers and in industry, services and retail trade. By contrast, confidence remains high in construction (see Graph 1.2.10).

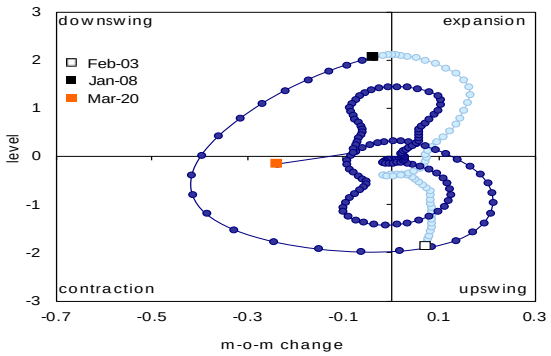
Graph 1.2.10: Radar Chart for the Netherlands



In **Poland** - where all business and consumers surveys in March were performed before strict confinement measures were taken – sentiment decreased sharply (−7.2) and throughout the quarter, exacerbating the downward trend that was visible since mid-2018. At 95.3 points, the indicator is now well below its long-term average of 100. Slipping confidence sent the Polish climate tracer into the contraction area (see Graph 1.2.11).

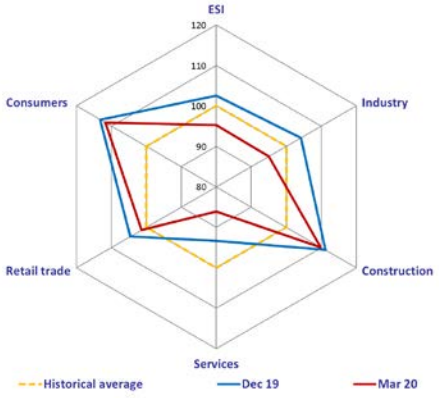
The important drop in the Polish EEI (−4.0 points in March compared to December 2019) resulted from worsened employment plans across all four business sectors.

Graph 1.2.11: Economic Sentiment Indicator and Climate Tracer for Poland



As the radar chart shows (see Graph 1.2.12), confidence weakened severely in industry and services, while the decline in retail trade, construction and among consumers was less pronounced. The level of confidence is markedly below long-term average in services and industry. By contrast, confidence remains well above long-term average in construction and among consumers, and just above it in retail trade.

Graph 1.2.12: Radar Chart for Poland



2. SPECIAL TOPIC: A CLOSER LOOK AT THE DRIVERS OF THE ECONOMIC SENTIMENT INDICATOR

The Economic Sentiment Indicator (ESI) is, roughly speaking, an economy-wide summary of the five sector-specific confidence indicators.[7] Actually, the indicator can be broken down into contributions by sector or component questions. This special topic presents such a decomposition and illustrates how it can be used to understand which components are the main drivers of the ESI. The second part presents a decomposition of the euro-area ESI into contributions by country.

Theoretical decomposition

The ESI is based on the complete set of questions underlying the five confidence indicators. More precisely, the ESI is computed as the weighted average of 15 standardised individual component series. As a last step, the weighted average is rescaled to a long-term average of 100 and a standard deviation of 10.

As all these transformations are linear, one can write the ESI as the sum of the contributions of the 15 individual questions:

$$ESI_t = 100 + \sum_{q=1}^{15} \alpha_t^q$$

where α_t^q is a linear transformation of the balance series for question q. The exact transformation, which depends not only on the sectoral weights and the imposed standard deviation of 10, but also on the availability of the other questions and, more importantly, the standard deviations of the individual balance series, is not explicitly stated here for the sake of readability. While the breakdown into the 15 individual contributions would be difficult to interpret, one can group the contributions, for instance by sector or by topic of the questions. This gives the opportunity to have a closer look at the drivers of the ESI.

Sectoral contributions

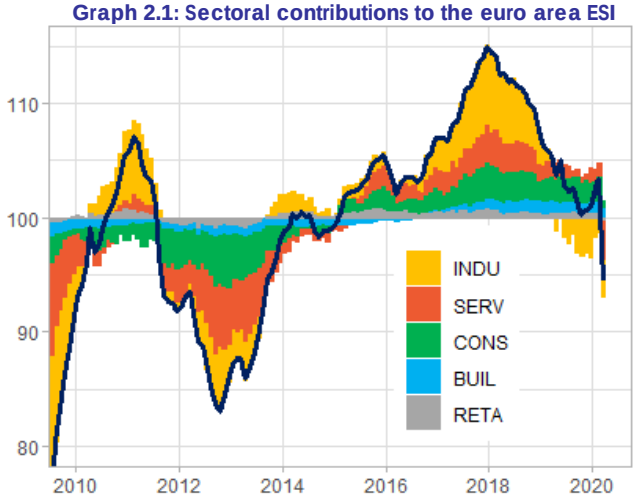
This section presents the sectoral contributions to the ESI. With the contributions of the 15 individual questions grouped by sector, one gets 5 sectoral contributions that add up exactly to the ESI (neglecting the arbitrarily chosen long-term level of 100).

The contribution for one sector is a combination of that sector's weight in the overall indicator and the strength of the cyclical component in that sector. As the series are standardised before entering the ESI, these contributions should correspond in principle to the nominal weight of the sectors over the long run: 40% for industry, 30% for services, 20% for consumers, 5% for retail trade, and 5% for construction. Temporary deviations from these shares reflect the strength of the cyclical component of the sectors. In practice, if a sector's contribution during a given period is larger than its nominal weight, it should be interpreted as this sector having more marked cyclical developments than the other sectors.

Graph 2.1 presents such a decomposition for the ESI for the euro area. The dark blue line shows the total ESI, while the coloured areas present the contributions of the four business sectors and consumers. A contribution above 100 means that the sector was pushing the ESI upward at the time, which is equivalent to saying that sentiment in that sector was above its long-term average.

[7] For details see the Joint Harmonised EU Programme of Business and Consumer Surveys User Guide (section 3.6.6), available at: https://ec.europa.eu/info/files/user-guide-joint-harmonised-eu-programme-business-and-consumer-surveys_en

Graph 2.1: Sectoral contributions to the euro area ESI

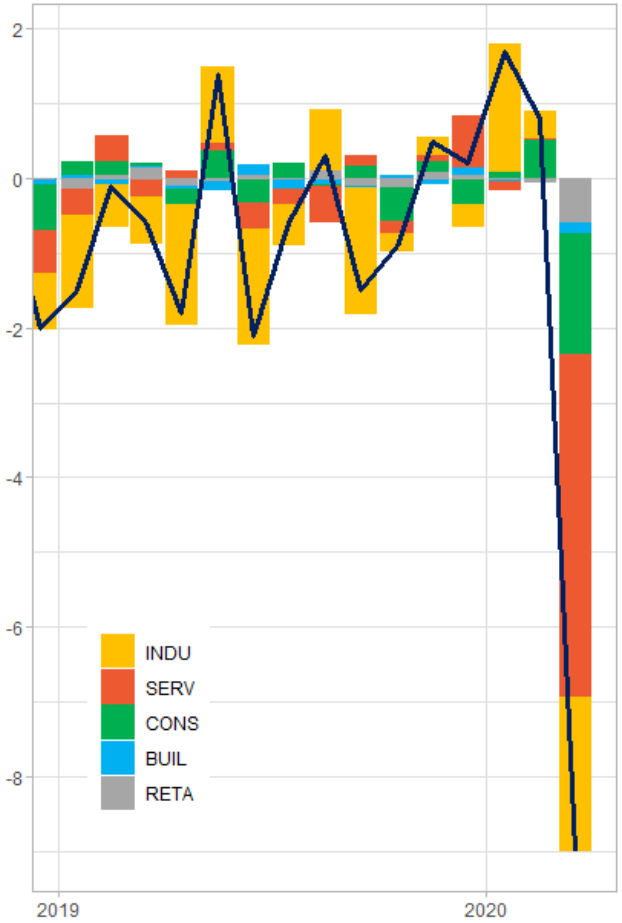


This figure shows how the different sectors have driven the ESI since the end of the Great Recession. For instance, consumers and the building sector kept contributing negatively to the overall sentiment long after 2010. Actually, they only started contributing positively to the overall sentiment in 2015 for consumers and late 2016 for the building sector. On the other hand, the industrial cycle is clearly driving the developments in the ESI. Industry was by far the single largest positive contribution during the 2011 recovery. During the expansion phase in 2017-2018, industry contributed almost half of the total ESI, although it theoretically accounts for 40% of the total. Finally, industry was the only sector below its long-term average from Spring 2019 onwards. The rapidly deteriorating contribution from industry explains the strong decrease in the ESI in 2018 and 2019, when the other sectors did not show much worsening. This industry-led downturn was in marked contrast to the downturn during the European sovereign debt crisis of 2011-12 that was characterised by significant declines in services and consumer sentiment.

Industry is not only the single largest driver of the level of the ESI, but also the largest driver of the changes in the ESI since 2016. From trough to peak between March 2016 and December 2017, the ESI of the euro area increased by 13.0 points. Industry contributed to this increase by 6.7 points, i.e. more than 50%. Furthermore, from peak to trough between December 2017 and October 2019, the ESI of the euro area decreased by 14.8 points. Out of these, 10.4 points, i.e. 70%, are explained by the deterioration of sentiment in industry.

Graph 2.2 presents the sectoral contributions to the month-on-month changes in the ESI of the euro area, since January 2019. It confirms that during most of 2019, the changes in the ESI were mainly driven by deteriorating sentiment in industry. However, during the fourth quarter of 2019, industry did not contribute as much as it did before. After this period of moderation, industry then actually drove the pick-up in the ESI in the beginning of 2020. Finally, data for March 2020 show that the dramatic fall in the ESI, by almost 9 points, was explained to a large extent by the services sector (accounting for 4.6 points of the fall), industry (2.1 points) and consumers (1.6 points).

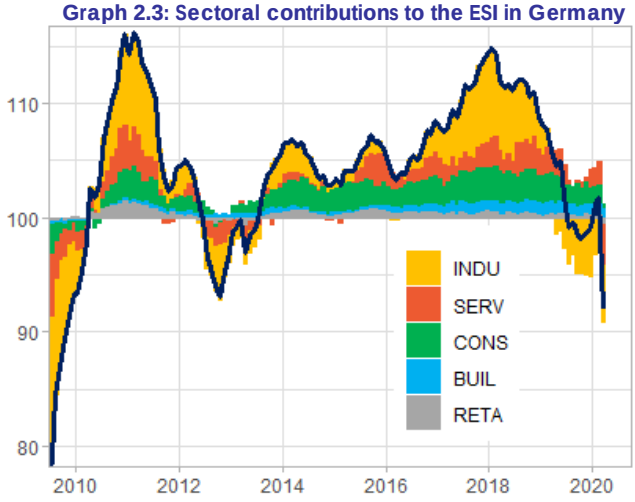
Graph 2.2: Sectoral contributions to the changes in the ESI for the euro area



In the following we replicate the sectoral decomposition of the ESI for the largest economies of the euro area. Graph 2.3 presents the sectoral contributions to the ESI in Germany, since 2010. It shows that, similarly to the euro area, the German industry drives the cycles of overall sentiment. Moreover, during the 2011 recovery and the expansion phase in 2017-2018, industry accounted for more than

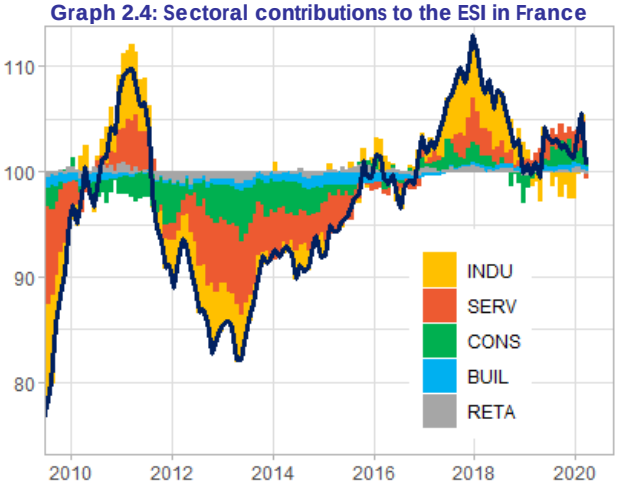
half of the level of the ESI. Further in line with the euro area, over the last 3 years (with the exception of March 2020), industry has been the only sector below its long-term average, pushing the ESI down below 100 at the end of 2019. On the other hand, consumers and the construction sector have remained quite resilient since 2010: for both, sentiment contributed positively to the total ESI almost continuously since summer 2010. Finally, although the nominal weight of the services sector component in the ESI is 30%, the contribution of that sector to overall sentiment in Germany has been 18% on average since 2010, far lower than its weight. This seems to indicate that since 2010, the cycles in the services component have been rather mild compared to the rest of the economy.

Graph 2.3: Sectoral contributions to the ESI in Germany



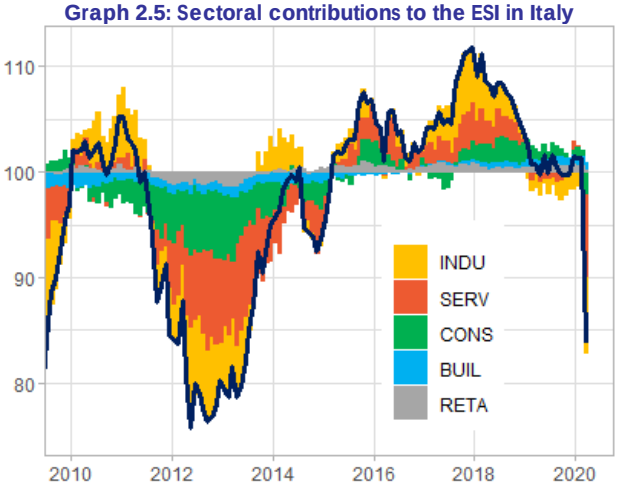
Graph 2.4 shows that contrary to Germany, French consumers remained pessimistic between 2010 and September 2015; in the construction sector, sentiment moved above its long-term average only in 2017. Further in contrast with Germany and the euro area, the sentiment cycles in France are shown to be largely driven by the services sector, which is consistent with the significant share of services in the French economy. Moreover, the contribution of industry to overall French sentiment remained below its theoretical share of 40% most of the time, with the notable exception of the short 2011 recovery and the expansion of 2017-2018.

Graph 2.4: Sectoral contributions to the ESI in France



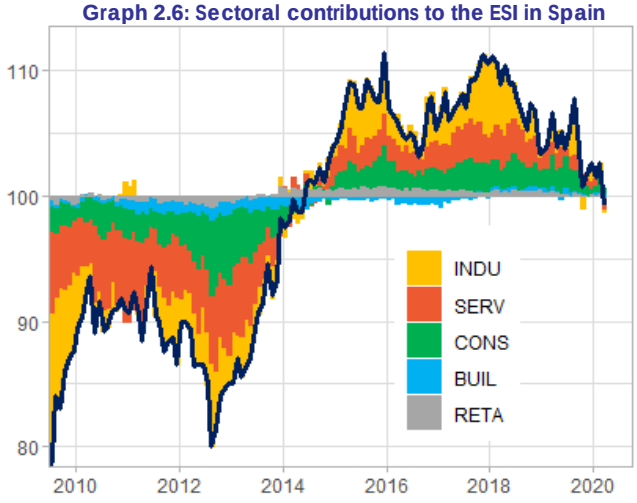
Graph 2.5 shows that, like in France, sentiment among Italian consumers remained subdued until 2015 in the aftermath of the Great Recession and the contribution of the construction sector only turned positive in 2017. In Italy, both industry and services appear to drive the cycles of overall sentiment equally. However, during the European debt crisis, the contribution of consumer sentiment in Italy was on average 26% of overall sentiment, far above the theoretical weight of the indicator of 20%.

Graph 2.5: Sectoral contributions to the ESI in Italy



Graph 2.6 shows that in Spain, sentiment in all sectors but construction turned above their respective long-term averages in a very short period of time in 2015. This points to highly synchronised cycles across sectors in Spain, with the notable exception of construction. However, while the services sector and consumers were the largest drivers of developments in the ESI in the aftermath of the Great Recession, industry took over as the largest driver of the ESI's recovery after 2016.

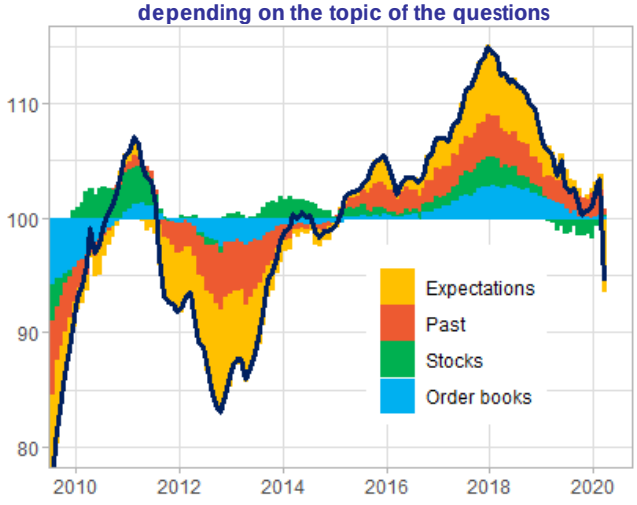
Graph 2.6: Sectoral contributions to the ESI in Spain



Topic of the questions

Another way of breaking down the movements of the ESI is to group the contributions of the 15 individual questions by topic of the questions. For instance, Graph 2.7 presents the contributions to the ESI of the euro area based on four groups: expectations questions, backward looking questions, questions about stocks and questions about order books. It shows that questions on expectations, order books and the past situation show broadly parallel developments, i.e. in most cases they move up and down together with the ESI.

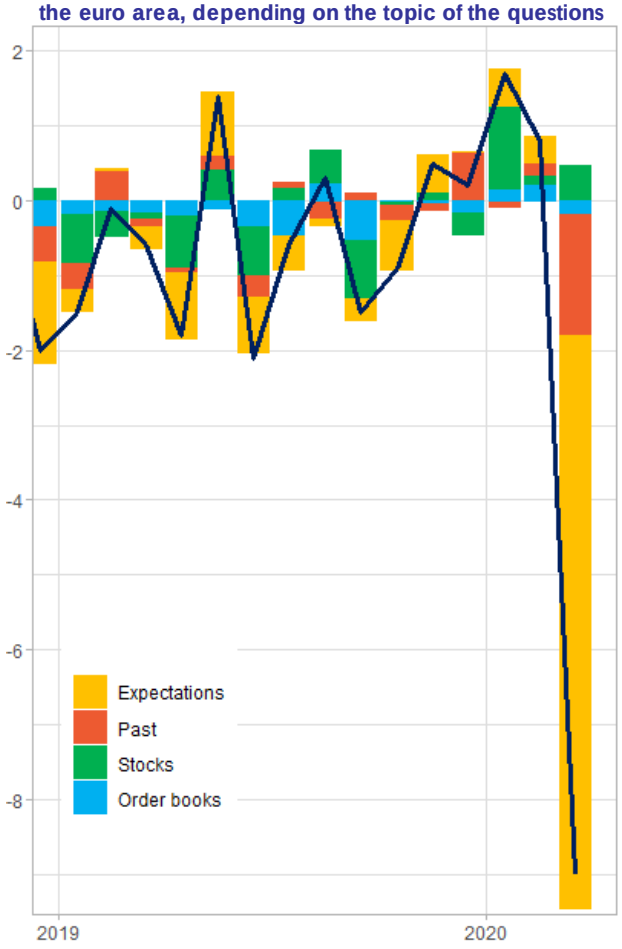
Graph 2.7: Contributions to the euro area ESI, depending on the topic of the questions



On the other hand, the questions about stocks are not always in line with the developments in the other questions and the ESI, and they appear to be early indicators of coming developments in the ESI. This last observation can be explained by the fact that the contribution of stocks is driven to a large extent by question 4 of the EU-wide harmonised industry survey (the assessment of the stocks of finished products). There is only one other question about stocks entering the ESI, in the retail trade survey. Considering the sectoral weights in the ESI, the weights of question 4 of the industry survey is 8 times higher than that of the retail trade survey, which explains why the stocks questions are mostly driven by industry. As industry was leading the other sectors during the 2011 recovery and in 2014, the overall contribution of stocks might appear to be leading.

Graph 2.8 presents the contributions to the month-on-month changes in the euro-area ESI, grouped by topic of the questions. It shows that throughout 2019, the changes were largely driven by expectations and the assessment of stocks. On the other hand, the dramatic fall, by almost 9 points, of the ESI in March 2020 was to a large extent driven by the deterioration of expectations (accounting for 7.7 points) and, to a lesser extent, by backward looking questions (1.6 points).

Graph 2.8: Contributions to the changes in the ESI for the euro area, depending on the topic of the questions



Weight of the Member states

For geographical aggregates such as the euro area and the EU, it also interesting to know which countries are driving the aggregate results. The first idea to investigate this is to look at the weights of the Member States in the ESI. In principle, the countries with the largest weights should be the main drivers of the developments in the ESI.

Because of the weighting scheme of the ESI formula, the weights of each country in the ESI for the euro area are not straightforward, and can slightly differ from the share in euro-area GDP. The weight of a country in the ESI is a combination of the country weights in each sector (based on value-added) and the fixed sectoral weights (40% for industry, 30% for services, etc.). The first column of Table 2.1 presents the theoretical weights (for 2020) resulting from this combination, from the largest weight (Germany) to the smallest (Malta). In line with their share in euro area GDP, the countries with the largest weights are Germany, France, Italy, and Spain.

The second column of Table 2.1 presents the cumulative weights of the countries: the first row presents the weight of the country with the largest weight (Germany), the second row presents the sum of the weights of the two countries with the largest weights (France and Germany), the third row presents the weights of Germany, France and Italy together, etc. It shows that the first four countries reach already 75% of the weights in the ESI for the euro area. Eight countries account for more than 90% of the weights, and ten countries reach more than 95% of the total weight. Finally, 15 countries are necessary to gather 99% of the total weight.

To better understand the dynamic driving the ESI for the euro area, the ESI was computed for recursive groups of countries, based on the weights described above: starting with Germany and then adding the next country (in terms of weight) to the group. This gives the ESI for the group of two countries accounting for the largest weights, then for three countries, and so on. By definition, the last group of 19 countries is the euro area. The third column of Table 2.1 presents the correlation of the ESI for these groups with the ESI for the euro area. It shows that already with three countries, one can compute a series whose correlation (from 2000 onwards) with the ESI for the euro area is 0.979, and 0.997 with four countries. The correlation reaches 0.999 with nine countries, and cannot be distinguished from 1 with a 3-digit accuracy for 11 countries and more. Germany, France, Italy and Spain together can summarise almost all developments (99.7%) in the ESI for the euro area. This means that activity in the other countries is either well synchronised with the largest economies of the euro area or their weights in the ESI are too small to make a difference in the indicator. To illustrate this, the next section presents the actual country contributions to the ESI.

Table 2.1: Country weights (%) in the ESI of the euro area for 2020 and cumulative correlation with the ESI for the euro area

	Country weight (%)	Cumulative weight (%)	Cumulative correlation with the euro area ESI
Germany	31.2	31.2	0.796
+ France	18.4	49.6	0.924
+ Italy	15.5	65.1	0.979
+ Spain	10	75.1	0.997
+ Netherlands	5.8	81	0.998
+ Ireland	3.9	84.8	0.998
+ Belgium	3.6	88.4	0.998
+ Austria	3.5	91.9	0.998
+ Finland	2	93.9	0.999
+ Portugal	1.7	95.6	0.999
+ Greece	1.6	97.1	1.000
+ Slovakia	0.9	98	1.000
+ Slovenia	0.4	98.5	1.000
+ Lithuania	0.4	98.9	1.000
+ Luxembourg	0.4	99.3	1.000
+ Latvia	0.2	99.5	1.000
+ Estonia	0.2	99.7	1.000
+ Cyprus	0.2	99.9	1.000
+ Malta	0.1	100	1.000

Contributions of the Member states

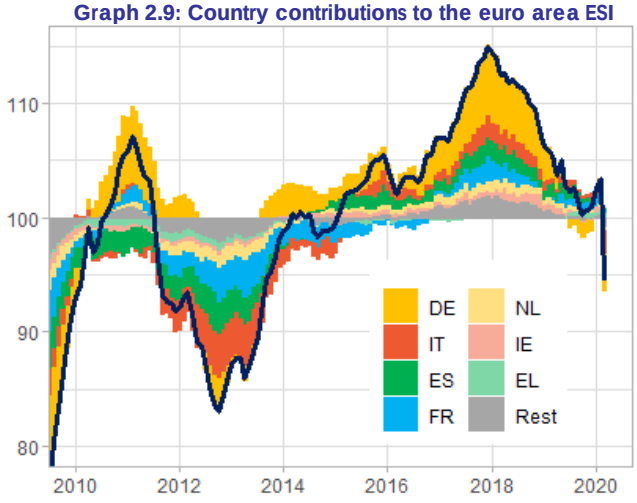
The balance series for each individual question on a euro area level are themselves linear combinations of the balance series of individual countries. Combined with the previously described decomposition, the ESI can be represented as the sum of the contributions of the 15 individual questions for all Member states. This implies that the euro area ESI can be written as the sum of 285 (=15x19) contributions:

$$ESI_t^{EA} = 100 + \sum_{q=1}^{15}\sum_{c=1}^{19}\beta_t^{c,q}$$

Clearly, so many contributions would make a decomposition impossible to read, but by grouping the contributions by countries, one can assess which countries are driving the developments in the ESI every month. Moreover, one can compare the actual contributions with the theoretical weights presented above, to understand when and how a country drove the ESI more than usual. However, by contrast to the sectoral contributions, the country contributions do not exactly reflect these theoretical weights, even over the long run. As the series for each country are not standardised before computing the euro area series, the contributions also depend on country specific volatility.

Graph 2.9 presents the actual country contributions to the ESI for the euro area, since 2010. For practical reasons, it only shows the countries whose absolute contribution reached at least 1 point once since 2010. The other countries are grouped in the grey area.

Graph 2.9: Country contributions to the euro area ESI



Since 2010, Germany has been by far the largest contributor to the ESI for the euro area. This reflects the theoretical weight as explained above, but also the fact that sentiment in Germany has been higher than in most other Member states. For instance, in the aftermath of the Great Recession, Germany was the first country showing a significant positive contribution to the ESI for the euro area, in April 2010. It was also the last country above average in late 2011 and early 2012. At the peak of the 2011 recovery, in February, Germany accounted for 53% of the total absolute contributions to the ESI, to be compared to its theoretical weight of 31.2%.

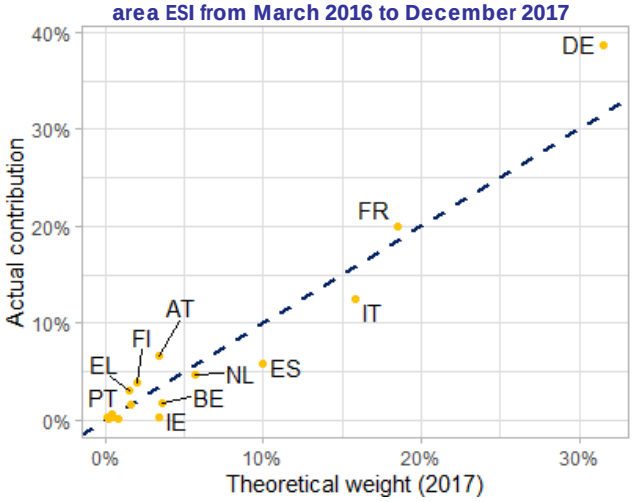
By contrast, during the European debt crisis, Germany pushed the euro area ESI downward only for a short period and to a lesser degree than the other large economies of the euro area. At the trough in October 2012, Germany stood for only 18% of the total absolute contributions to the ESI, i.e. approximately the same as France (18%), Italy (21%) and Spain (16%).

After quite a short period below average, Germany was again the first country driving the pickup in August 2013, long before Spain (2015), Italy (late 2015), and France (late 2017) started pushing up noticeably the ESI for the euro area. Actually, Germany has been the main driver of the euro area ESI since the 2017-2018 expansion phase. At the peak of optimism, in December 2017, Germany accounted for 40.8% of the total, while France's and Italy's contributions (respectively 14.7% and 12.1%) were largely below their theoretical weight in the indicator (respectively 18.5% and 15.9% in 2017). Finally, Germany was the first and only of the largest economies to contribute negatively to economic sentiment in the euro area in the second half of 2019, pushing the euro area ESI down close to 100.

Also in terms of changes in the ESI of the euro area, Germany explained the largest share since 2016. From trough to peak between March 2016 and December 2017, the ESI of the euro area increased by 13.0 points. Germany contributed to this increase by 5.0 points, i.e. more than 38% and markedly above its weight in the indicator (see Graph 2.10). Spain, on the other hand, contributed only 6% of the increase, markedly below its theoretical weight of 10.0%

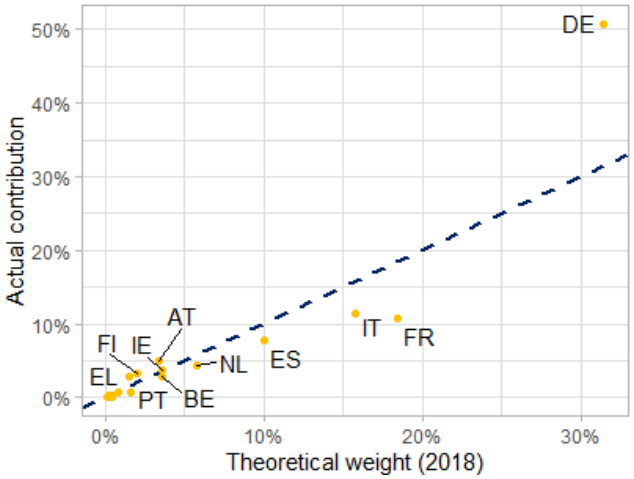
in 2018, because sentiment had already been quite high in Spain in early 2016.

Graph 2.10: Contributions to the changes in the euro area ESI from March 2016 to December 2017



Furthermore, from peak to trough between December 2017 and October 2019, the ESI of the euro area decreased by 14.8 points. Out of these, 7.5 points were explained by the deterioration in sentiment in Germany, i.e. 51% of the total decrease (see Graph 2.11). At the same time, France and, to a lesser extent, Italy, were more resilient and contributed only a little to the decrease in the ESI in 2018 and 2019, relative to their weight in the indicator.

Graph 2.11: Contributions to the changes in the euro area ESI from December 2017 to October 2019

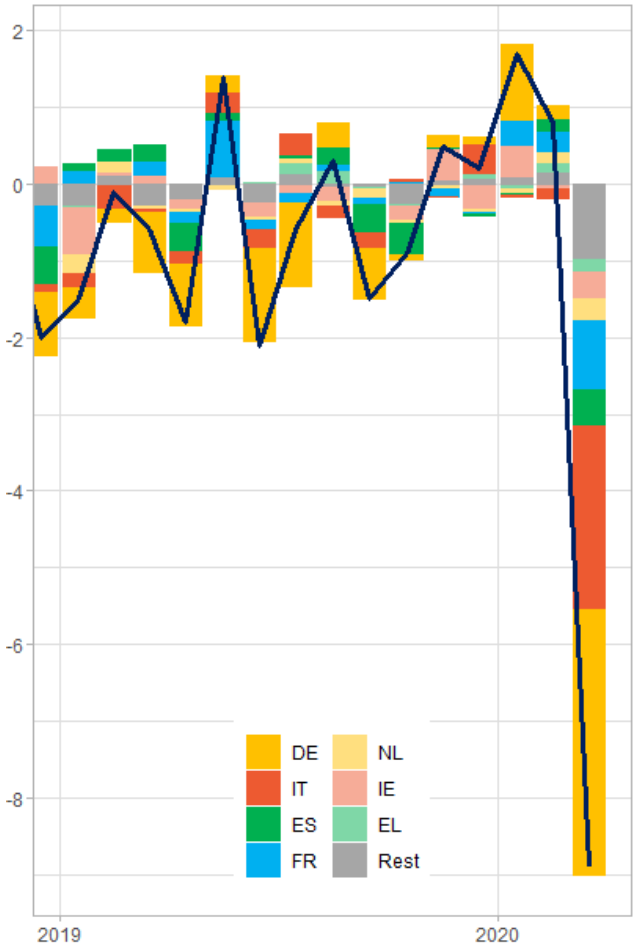


Overall, the largest contributors to the ESI for the euro area after Germany are France, Italy and Spain, as could be expected given their shares in the euro area economy. Although the contributions of the other countries are far from negligible, the previous section showed that the ESI for these four countries is already a very good summary of sentiment in the euro area. This means that economic activity in most of the other countries is well synchronised with the largest economies of the euro area. For instance, the contributions of the 15 other countries grouped together show a correlation of 94.6% with the ESI for the euro area. Therefore, even though they account for around 25% of the weight in the indicator, their contributions do not usually drive the overall results.

Graph 2.12 presents the country contributions to the month-on-month changes in the ESI for the euro area. For practical reasons, it only shows a selection of countries, while the other countries are again grouped in the grey area. It confirms the prominent role of Germany in the decrease throughout 2019, while France and Italy contributed only marginally to the decrease. On the other hand, Ireland and Spain contributed significantly on several occasions to the month-on-month changes in the ESI for the euro area. It also shows that the strong pick-up in the ESI in January 2020 was driven by three countries: Germany, Ireland and France, while the subsequent increase in February was broader-based across the euro area.

Concerning the dramatic fall of the ESI in March 2020, the results should be interpreted with caution. They may be less comparable across countries than usual, leading to less accurate country contributions. While in principle the survey responses were collected between 26 February and 23 March, there are considerable differences across countries as to when the fieldwork effectively stalled due to containment measures enacted to combat the spread of the coronavirus. With that in mind, out of the 8.9 points of decrease in the ESI in March 2020, 39% (3.5 points) are explained by Germany, 27% (2.3 points) by Italy, 10% (0.9 points) by France and 5% (0.5 points) by Spain.

Graph 2.12: Country contributions to the changes in the ESI for the euro area



Conclusion

This special topic presented a decomposition of the ESI to understand which of its components are the main drivers. With a breakdown of the ESI by sector, it showed how industry drives the cycles in the ESI in the euro area and in Germany, while the services sector appears to drive the developments in sentiment in France. With a breakdown by topic of the questions, it showed that expectations, order books and past situation questions generally follow parallel developments: in most cases they move up and down together with the ESI. The decomposition was also used to assess which component drove the month-on-month changes in the ESI. For instance in the euro area, the expectations questions accounted for 7.7 points out of 8.9 points of the dramatic fall in March 2020. Finally, with a breakdown by country, it was shown that Germany is the main driver of the ESI for the euro area. Moreover, it illustrated how Germany, France, Italy and Spain together summarise almost all developments (99.7%) in the ESI for the euro area, although accounting for only 75% of the total weight.

ANNEX TO SECTION 1

Table A.1: Inflation perceptions by socio-demographic category of respondent (in %)

	weighted mean adjusted for outliers					25% quartile					median					75% quartile				
	Average	2019			2020	Average	2019			2020	Average	2019			2020	Average	2019			2020
	2004-2020	Q2	Q3	Q4	Q1	2004-2020	Q2	Q3	Q4	Q1	2004-2020	Q2	Q3	Q4	Q1	2004-2020	Q2	Q3	Q4	Q1
	Total																			
EU	8.8	7.6	7.7	7.1	7.1	3.8	3.0	3.0	3.0	2.9	6.5	5.2	5.3	5.1	5.0	11.1	9.3	9.3	8.8	8.5
EA	8.7	7.1	7.1	6.5	6.4	3.6	2.6	2.6	2.5	2.4	6.3	4.7	4.7	4.5	4.3	10.9	8.7	8.7	8.2	7.8
	Gender: Male																			
EU	7.8	6.4	6.5	6.1	6.0	3.4	2.8	2.8	2.7	2.6	5.8	4.7	4.7	4.5	4.3	9.7	7.9	8.1	7.3	7.4
EA	7.6	5.9	6.0	5.4	5.3	3.2	2.3	2.4	2.2	2.1	5.5	4.2	4.2	3.9	3.6	9.4	7.2	7.5	6.6	6.6
	Gender: Female																			
EU	10.0	8.9	8.9	8.4	8.5	4.2	3.3	3.3	3.3	3.3	7.3	6.0	6.1	5.9	5.8	12.7	11.2	11.3	10.5	10.4
EA	10.0	8.5	8.3	7.8	7.8	4.1	3.0	2.8	2.8	2.8	7.2	5.4	5.4	5.4	5.1	12.6	10.7	10.7	10.0	9.8
	Age: 16 to 29																			
EU	9.1	7.9	7.9	7.7	7.3	3.9	3.1	3.1	3.1	2.9	6.9	5.5	5.8	5.3	5.2	11.9	10.5	10.4	9.9	9.3
EA	9.2	7.6	7.4	7.1	6.7	3.8	2.8	2.7	2.8	2.5	6.9	5.1	5.3	4.7	4.7	12.0	10.2	9.9	9.3	8.8
	Age: 30 to 49																			
EU	9.0	7.8	7.8	7.3	7.3	3.9	3.1	3.1	3.0	3.0	6.6	5.4	5.3	5.1	5.2	11.4	9.5	9.6	8.9	8.8
EA	9.0	7.4	7.3	6.7	6.6	3.7	2.7	2.7	2.5	2.5	6.5	4.9	4.8	4.5	4.5	11.3	8.9	9.0	8.4	8.1
	Age: 50 to 64																			
EU	8.7	7.5	7.7	6.9	7.4	3.8	3.0	3.1	3.0	3.1	6.4	5.4	5.5	4.9	5.2	10.9	9.5	9.5	8.6	9.1
EA	8.5	6.9	7.0	6.2	6.7	3.6	2.6	2.6	2.4	2.5	6.1	4.7	4.8	4.3	4.5	10.7	8.8	8.7	8.0	8.5
	Age: 65+																			
EU	8.6	6.9	7.2	6.7	6.5	3.9	3.0	3.1	3.1	2.8	6.5	5.0	5.2	5.1	4.7	10.7	8.5	9.0	8.1	7.8
EA	8.3	6.1	6.3	5.9	5.6	3.7	2.6	2.6	2.5	2.3	6.1	4.3	4.4	4.3	3.9	10.3	7.5	8.0	7.1	6.8
	Income: 1st quartile																			
EU	10.9	9.9	10.1	9.8	9.5	4.5	3.9	3.7	3.8	3.4	8.0	6.9	7.0	6.6	6.3	14.1	12.6	12.8	12.5	12.1
EA	10.9	9.5	9.6	9.3	8.9	4.4	3.5	3.2	3.3	2.9	7.8	6.5	6.4	6.0	5.7	14.1	12.2	12.1	11.8	11.7
	Income: 2nd quartile																			
EU	9.3	8.3	8.7	7.4	7.7	4.0	3.3	3.5	3.2	3.2	6.9	5.7	5.9	5.5	5.4	11.8	10.5	10.2	8.8	9.2
EA	9.1	7.8	8.3	6.8	7.0	3.8	2.9	3.1	2.6	2.8	6.6	5.1	5.3	5.0	4.8	11.7	10.0	9.6	8.1	8.5
	Income: 3rd quartile																			
EU	8.3	7.3	7.2	6.7	6.4	3.7	3.0	3.1	3.0	2.7	6.2	5.2	5.2	5.0	4.8	10.5	8.6	9.2	8.1	7.8
EA	8.2	6.8	6.6	6.1	5.7	3.5	2.5	2.7	2.5	2.2	6.0	4.6	4.6	4.4	4.0	10.3	7.9	8.5	7.5	7.1
	Income: 4th quartile																			
EU	7.0	5.7	5.8	5.5	5.5	3.2	2.6	2.6	2.6	2.5	5.3	4.2	4.2	4.2	4.0	8.9	7.3	7.2	6.9	6.7
EA	6.8	5.2	5.1	4.8	4.6	3.0	2.1	2.1	2.0	1.9	5.1	3.7	3.6	3.5	3.2	8.6	6.6	6.4	6.2	5.8
	Education: Primary																			
EU	10.1	8.9	9.6	8.7	8.9	4.3	3.2	3.8	3.2	3.7	7.3	5.9	6.5	5.7	6.0	12.8	11.0	12.8	10.8	11.2
EA	10.0	8.5	9.1	8.1	8.3	4.0	2.7	3.3	2.7	3.3	7.1	5.3	5.8	5.1	5.4	12.7	10.6	12.1	10.0	10.5
	Education: Secondary																			
EU	8.9	8.0	8.1	7.6	7.6	3.8	3.2	3.2	3.1	2.9	6.5	5.6	5.7	5.5	5.2	11.2	9.9	9.9	9.1	9.1
EA	8.7	7.6	7.6	7.0	6.9	3.6	2.8	2.7	2.7	2.4	6.3	5.1	5.2	4.9	4.5	11.0	9.4	9.3	8.5	8.5
	Education: Further																			
EU	7.1	6.0	6.3	5.8	5.4	3.2	2.7	2.8	2.6	2.5	5.4	4.4	4.5	4.2	4.0	9.0	7.5	7.7	7.3	6.8
EA	7.0	5.5	5.6	5.0	4.6	3.0	2.2	2.3	2.1	1.9	5.1	3.9	3.8	3.5	3.3	8.8	6.8	6.9	6.4	5.9

Table A.2: Inflation expectations by socio-demographic category of respondent (in %)

	weighted mean adjusted for outliers					25% quartile					median					75% quartile				
	Average	2019			2020	Average	2019			2020	Average	2019			2020	Average	2019			2020
	2004-2020	Q2	Q3	Q4	Q1	2004-2020	Q2	Q3	Q4	Q1	2004-2020	Q2	Q3	Q4	Q1	2004-2020	Q2	Q3	Q4	Q1
	Total																			
EU	6.0	6.0	6.2	6.2	6.3	2.3	2.1	2.2	2.3	2.3	4.2	3.9	3.8	4.2	4.0	7.3	7.2	7.5	7.3	7.4
EA	5.7	5.5	5.5	5.5	5.5	2.0	1.7	1.7	1.8	1.8	3.8	3.3	3.2	3.6	3.3	6.9	6.4	6.6	6.5	6.5
	Gender: Male																			
EU	5.5	5.3	5.5	5.4	5.5	2.2	2.0	2.0	2.1	2.1	3.8	3.5	3.5	3.7	3.6	6.6	6.0	6.3	6.2	6.3
EA	5.1	4.7	4.9	4.8	4.7	1.9	1.5	1.5	1.6	1.5	3.4	3.0	2.9	3.0	2.9	6.1	5.2	5.5	5.4	5.3
	Gender: Female																			
EU	6.7	6.9	7.2	7.3	7.5	2.5	2.3	2.4	2.5	2.5	4.6	4.5	4.8	4.9	4.9	8.4	8.6	9.1	9.5	9.2
EA	6.4	6.4	6.4	6.6	6.7	2.2	1.9	1.9	2.0	2.0	4.3	4.0	4.1	4.3	4.2	8.0	7.9	8.2	8.7	8.4
	Age: 16 to 29																			
EU	6.2	6.5	6.7	6.9	6.6	2.3	2.1	2.3	2.4	2.3	4.4	4.3	4.5	5.1	4.6	8.1	8.0	8.4	9.4	8.2
EA	6.0	6.1	6.1	6.2	5.9	2.1	1.6	1.8	1.9	2.0	4.1	3.8	4.0	4.5	4.0	7.8	7.4	7.8	8.7	7.5
	Age: 30 to 49																			
EU	6.2	6.2	6.4	6.5	6.4	2.3	2.2	2.0	2.2	2.3	4.2	4.2	4.0	4.2	4.2	7.6	7.6	8.0	7.9	7.8
EA	5.8	5.8	5.7	5.9	5.6	2.0	1.8	1.6	1.8	1.7	3.9	3.7	3.4	3.6	3.5	7.2	7.0	7.3	7.4	6.9
	Age: 50 to 64																			
EU	6.0	5.9	6.2	6.1	6.7	2.4	2.2	2.3	2.4	2.4	4.2	3.9	4.1	4.1	4.3	7.4	7.1	7.2	7.4	7.8
EA	5.6	5.3	5.5	5.4	5.9	2.1	1.7	1.8	1.8	1.9	3.8	3.2	3.4	3.4	3.6	6.8	6.3	6.2	6.5	6.8
	Age: 65+																			
EU	5.7	5.4	5.6	5.7	5.8	2.4	2.3	2.3	2.3	2.3	4.1	3.8	3.8	3.9	3.9	7.0	6.5	6.8	6.7	6.9
EA	5.2	4.6	4.7	4.8	4.8	2.1	1.7	1.7	1.8	1.7	3.6	3.1	3.0	3.2	3.0	6.3	5.5	5.6	5.7	5.7
	Income: 1st quartile																			
EU	7.4	7.7	8.2	8.6	8.4	2.7	2.6	2.5	3.0	2.8	5.1	5.1	5.2	5.6	5.2	9.4	10.0	10.3	10.9	10.2
EA	7.0	7.1	7.5	7.9	7.7	2.4	2.2	2.0	2.5	2.2	4.7	4.4	4.6	5.0	4.6	8.9	9.2	9.7	10.2	9.4
	Income: 2nd quartile																			
EU	6.4	6.5	7.0	6.6	6.8	2.5	2.2	2.5	2.4	2.6	4.5	4.3	4.6	4.6	4.5	8.1	8.3	8.9	8.0	8.7
EA	5.9	5.9	6.3	5.9	6.1	2.2	1.8	2.0	2.0	2.1	4.1	3.7	3.9	3.9	3.7	7.5	7.5	8.1	7.2	7.8
	Income: 3rd quartile																			
EU	5.7	5.8	6.0	5.7	5.7	2.3	2.2	2.3	2.3	2.2	4.1	3.9	3.9	4.0	3.8	7.1	7.1	7.6	6.9	6.9
EA	5.3	5.3	5.3	5.0	4.9	2.0	1.8	1.9	1.8	1.6	3.7	3.4	3.3	3.4	3.0	6.6	6.3	6.8	6.0	6.0
	Income: 4th quartile																			
EU	4.9	4.8	4.9	5.0	5.1	2.1	2.0	2.0	2.1	2.0	3.5	3.3	3.2	3.5	3.4	6.1	5.7	5.8	6.0	6.2
EA	4.6	4.2	4.1	4.2	4.2	1.8	1.6	1.5	1.6	1.5	3.1	2.8	2.5	2.8	2.6	5.6	4.8	5.0	5.0	5.0
	Education: Primary																			
EU	6.8	7.1	8.1	7.8	7.2	2.5	2.3	2.8	2.6	2.4	4.7	4.5	5.0	5.9	4.5	8.5	9.2	10.4	10.3	9.0
EA	6.3	6.5	7.4	7.1	6.5	2.2	1.9	2.4	2.1	2.0	4.3	3.9	4.3	5.5	3.9	7.9	8.4	9.7	9.5	8.2
	Education: Secondary																			
EU	6.1	6.4	6.5	6.5	7.0	2.3	2.3	2.3	2.4	2.5	4.2	4.3	4.2	4.5	4.5	7.6	7.8	7.8	8.2	8.5
EA	5.8	5.9	5.9	5.9	6.3	2.0	1.9	1.8	1.9	2.0	3.9	3.8	3.6	3.9	3.8	7.1	7.1	7.0	7.5	7.6
	Education: Further																			
EU	5.1	5.1	5.3	5.3	5.2	2.1	2.0	2.1	2.1	2.1	3.6	3.4	3.6	3.6	3.5	6.3	6.1	6.3	6.2	6.5
EA	4.8	4.5	4.4	4.5	4.2	1.8	1.6	1.7	1.6	1.5	3.3	2.9	2.8	2.9	2.8	5.8	5.2	5.3	5.3	5.2

ANNEX

Reference series

Confidence indicators	Reference series from Eurostat, via Ecowin (volume/year-on-year growth rates)
Total economy (ESI)	GDP, seasonally- and calendar-adjusted
Industry	Industrial production, working day-adjusted
Services	Gross value added for the private services sector, seasonally- and calendar-adjusted
Consumption	Household and NPISH final consumption expenditure, seasonally- and calendar-adjusted
Retail	Household and NPISH final consumption expenditure, seasonally- and calendar-adjusted
Building	Production index for building and civil engineering, trend-cycle component

Economic Sentiment Indicator

The economic sentiment indicator (ESI) is a weighted average of the balances of replies to selected questions addressed to firms and consumers in five sectors covered by the EU Business and Consumer Surveys Programme. The sectors covered are industry (weight 40 %), services (30 %), consumers (20 %), retail (5 %) and construction (5 %).
Balances are constructed as the difference between the percentages of respondents giving positive and negative replies. EU and euro-area aggregates are calculated on the basis of the national results and seasonally adjusted. The ESI is scaled to a long-term mean of 100 and a standard deviation of 10. Thus, values above 100 indicate above-average economic sentiment and vice versa. Further details on the construction of the ESI can be found here.
Long time series (ESI and confidence indices) are available here.

Economic Climate Tracer

The economic climate tracer is a two-stage procedure. The first stage consists of building economic climate indicators, based on principal component analyses of balance series (s.a.) from five surveys. The input series are as follows: industry: five of the monthly survey questions (employment and selling-price expectations are excluded); services: all five monthly questions except prices; consumers: nine questions (price-related questions and the question about the current financial situation are excluded); retail: all five monthly questions; building: all four monthly questions. The economic climate indicator (ECI) is a weighted average of the five sector climate indicators. The sector weights are equal to those underlying the Economic Sentiment Indicator (ESI, see above).
In the second stage, all climate indicators are smoothed using the HP filter in order to eliminate short-term fluctuations of a period of less than 18 months. The smoothed series are then normalised (zero mean and unit standard deviation). The resulting series are plotted against their first differences. The four quadrants of the graph, corresponding to the four business cycle phases, are crossed in an anti-clockwise movement and can be described as: above average and increasing (top right, ‘expansion’), above average but decreasing (top left, ‘downswing’), below average and decreasing (bottom left, ‘contraction’) and below average but increasing (bottom right, ‘upswing’). Cyclical peaks are positioned in the top centre of the graph and troughs in the bottom centre. In order to make the graphs more readable, two colours have been used for the tracer. The darker line shows developments in the current cycle, which in the EU and euro area roughly started in January 2008.

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