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European Business Cycle Indicators

1st Quarter 2016

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A photograph of a financial chart with a pen and a tablet. The chart shows various data series, including a line graph with peaks and troughs, and a bar chart below it. A silver pen lies across the chart, and a silver tablet is visible in the upper right corner.

Economic and
Financial Affairs

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European Commission

Directorate-General for Economic and Financial Affairs

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1st Quarter 2016

Special topics

- Results from quarterly surveys of managers in the manufacturing industry
- Radar charts – a tool for presenting trends in sectoral survey data

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OVERVIEW

Recent developments in survey indicators

- Both the euro-area and the EU Economic Sentiment Indicator (ESI) decreased throughout the first quarter of 2016. Despite the sizeable drops, the ESI continues to score above the long-term average of 100 in both the euro area (at 103.0) and the EU (at 104.6).
- Confidence worsened in all sectors in the euro area, with the largest corrections occurring in retail trade and among consumers. EU developments were similar, but were led by declining services confidence.
- Compared to the December readings, the ESI deteriorated in five of the seven largest EU economies (Germany, Spain, Italy, Netherlands and the UK), remained broadly stable in France and increased mildly only in Poland.
- Capacity utilisation in the manufacturing sector increased in the first quarter and currently stands slightly above its long-term average in the euro area and the EU. In the services sector, capacity utilisation declined slightly in the first quarter in both areas.

Special topic I: Results from quarterly surveys of managers in the manufacturing industry

This special topic presents quarterly survey results for the manufacturing industry sector. Four times a year - in January, April, July and October - some extra questions are added to the monthly survey, including questions on *factors limiting production*, *overall* and *export order developments*, *production capacity*, *capacity utilisation* and *competitive position* on domestic/foreign markets. The quarterly results are shown to be internally consistent and broadly support the picture conveyed by recent monthly manufacturing surveys: the percentage of managers stating demand as a factor limiting production, managers' appraisal of production capacity, their assessment of past order books and expectations of future export orders have remained fairly close to their levels of mid-2014, indicative of a still rather moderate economic recovery. The order-related indicators have shown some weakening recently, in line with decreasing monthly readings of industry confidence in early 2016. Yet, quantitative estimates of capacity utilisation have been on a (mild) upward trend. Finally, euro-area managers reported that their competitive position on foreign markets has deteriorated since mid-2015. While this is in line with the euro's recent appreciation, the survey-based competitiveness assessment is not restricted to prices/costs but comprises e.g. changes in quality and variety.

Special topic II: Radar charts – a tool for presenting trends in sectoral survey data

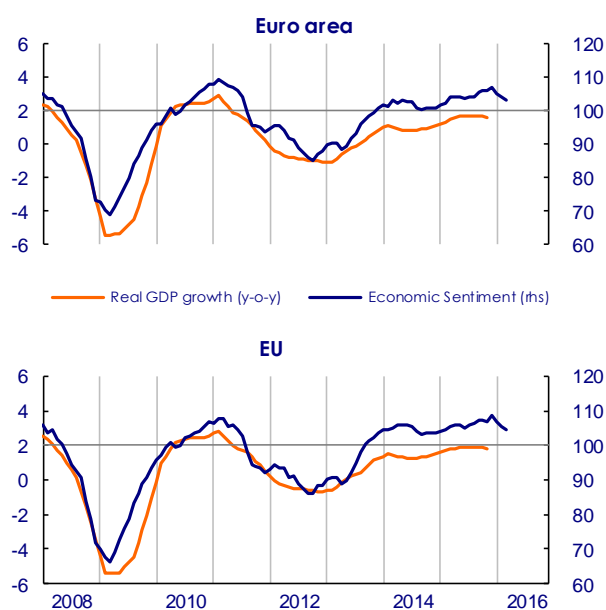
This special topic introduces the radar chart for presenting trends in sectoral survey data. The radar chart enables the reader to understand the developments in the data at a single glance, by offering a bird's-eye view on several dimensions. It illustrates and compares developments across sectors and thus helps to identify the driving forces behind the developments of the composite Economic Sentiment Indicator. It also displays the recent developments of the BCS indicators compared to their historical averages, thereby putting recent confidence levels into historical perspective.

1. RECENT DEVELOPMENTS IN SURVEY INDICATORS

1.1. Euro area and EU

After the moderate upward tendencies of 2015, the euro-area and the EU Economic Sentiment Indicators (ESI) fell markedly in the first quarter of 2016, decreasing for three months in a row. Despite these developments, the ESI remained above the long-term average of 100 in both the euro area (at 103.0) and the EU (at 104.6).

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.

Compared to the readings in December 2015, the ESI registered significant drops in the euro area (-3.6 points) and the EU (-3.9 points). The negative signals for the start into 2016 were echoed by the Ifo Business Climate Index (for Germany) and Markit Economics' Composite PMI for the euro area, which also deteriorated in the first quarter of 2016. Contrary to the ESI that deteriorated throughout the quarter, the Ifo

index rebounded somewhat in March after weakening for three consecutive months; the PMI was broadly unchanged in March after two consecutive declines in January and February.

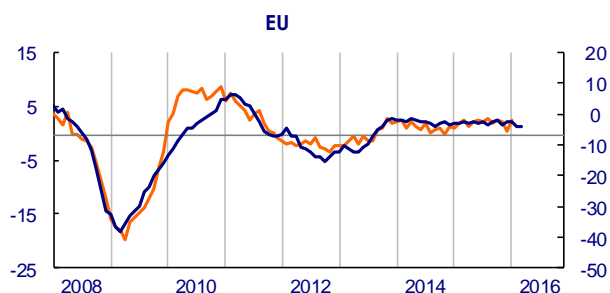
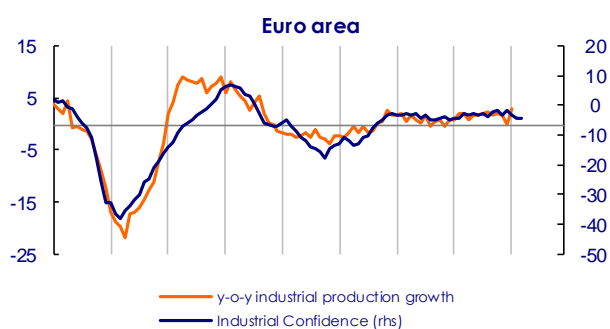
At euro-area and EU sector level, the negative development of the ESI over the first quarter was broad-based, reflecting worsening confidence in all sectors. In terms of levels, all sectoral EU and euro area indicators (still) score above or at their corresponding historical mean, except for construction confidence in the euro area. Despite the drops in the first quarter, retail trade and consumer confidence still compare markedly favourably to their historical averages.

Among the seven largest EU economies, sentiment worsened, compared to December 2015, in Italy (-5.5), Spain (-5.0), the UK (-4.1), Germany (-2.8) and the Netherlands (-2.3). Sentiment was broadly stable in France (-0.2), while it improved in Poland (+1.2).

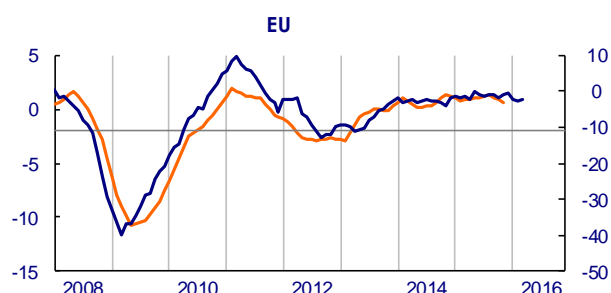
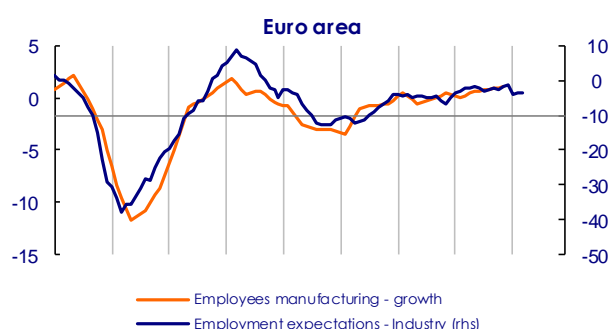
Sector developments

Over the first quarter of 2016, **industrial** confidence in both the euro area and the EU has fallen. A comparison of March's readings to those of last December shows decreases of -2.2 points in the euro area and -1.5 points in the EU. In a longer term perspective, Graph 1.1.2 shows that confidence in the industry sector has basically been moving sideways for more than two years now.

Graph1.1.2: Industry Confidence indicator



Graph1.1.3: Employment in Industry



In both European aggregates, managers' assessments of order books, export order books and current production as well as their expectations of future production worsened over the quarter. Managers' assessment of the stocks of finished products was broadly unchanged in both the euro area and the EU between the fourth quarter 2015 and the first quarter 2016. Selling price expectations were at a lower level in March than in December in both areas. However, the monthly profile saw price expectations edging up in March compared to February.

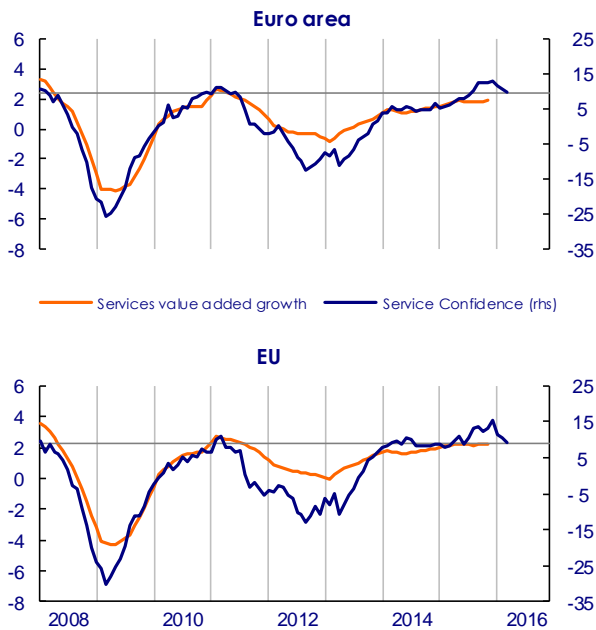
Managers' employment expectations worsened over the first quarter in both the euro area and the EU. Despite this, they remained clearly above their historical averages.

In the seven largest EU countries, compared to December 2015, industry confidence decreased in Spain, Germany and Italy (-4.6, -3.4 and -1.7), and was broadly stable in the Netherlands (-0.3), while it increased in the UK, Poland and France (+3.0, +1.4 and +1.1).

The latest readings from the quarterly manufacturing survey showed that, compared to the last quarter of 2015, *capacity utilisation in manufacturing* increased by 0.4 and 0.3 percentage points in the euro area and the EU, respectively. The level of capacity utilisation thus reached 81.9% (euro area) and 81.5% (EU), slightly above the corresponding long-term averages of 81.1% and 80.8%.

Since the end of 2015, confidence in *services* has been trending downward in both the euro area (-3.2) and the EU (-6.3). Confidence indicators currently score at their historical averages.

Graph1.1.4: Services Confidence indicator



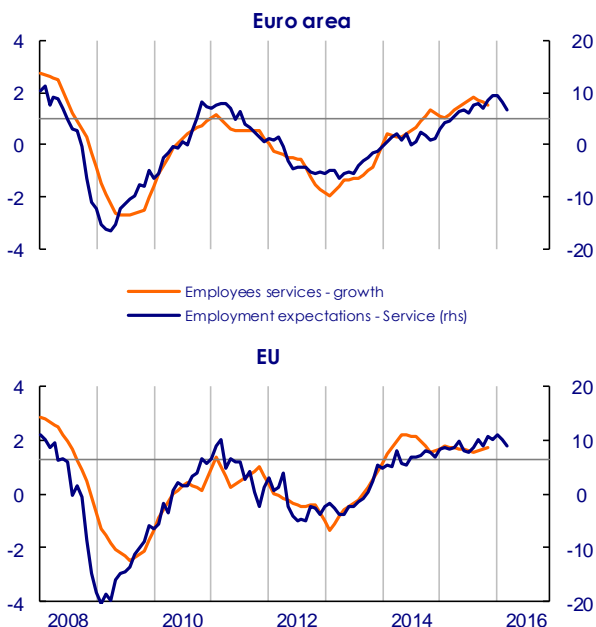
Looking at the largest EU countries and comparing to December, services confidence worsened significantly in the UK, Italy and Germany (-22.0, -10.2 and -4.1), and, less so, in Spain (-2.0). Confidence remained broadly stable in the Netherlands, France and Poland (-0.6, -0.2 and +0.4).

Capacity utilisation in services has been on an upward trend since the beginning of 2013. In the first quarter of 2016, the indicator fell slightly to 88.5% in the euro area and to 88.7% in the EU.

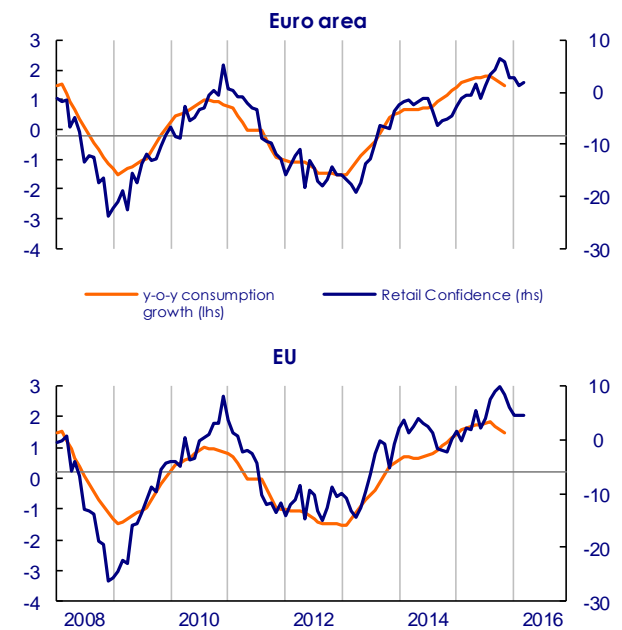
After a sharp drop at the end of 2015, **retail trade confidence** has continued to decrease in the first quarter of 2016 in both the euro area (-1.1) and the EU (-1.5). Nevertheless, confidence levels continue to be clearly above their historical averages.

In both areas, all of the components of the confidence index – managers' views on the past business situation, past and expected demand – worsened. The declines were more pronounced in the case of the EU.

Graph1.1.5: Employment in Services



Graph1.1.6: Retail Trade Confidence indicator



Worsened confidence in both areas was caused by negative developments in two of the three components of the indicator, i.e. managers' appraisals of the expected business activity and their views on the adequacy of the volume of stocks.

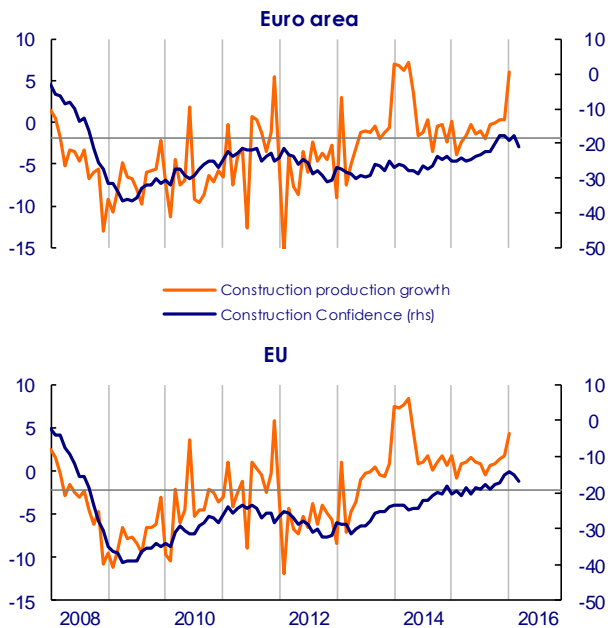
In both areas, services managers' employment expectations worsened over the first quarter and they are now closer to their long-term averages.

From a country perspective and compared to December, retail trade confidence decreased clearly in Spain and the Netherlands (-5.6 and -3.4), and, less so, in Italy, the UK and Germany (-2.6, -2.2 and -1.6). Confidence

remained broadly stable in Poland (-0.2), while it increased in France (+2.7).

Compared to the end of 2015, confidence in **construction** declined in both the euro area (-3.2) and the EU (-1.9). From a month-on-month perspective, the indicator saw a larger drop in March in both areas.

Graph1.1.7: Construction Confidence indicator

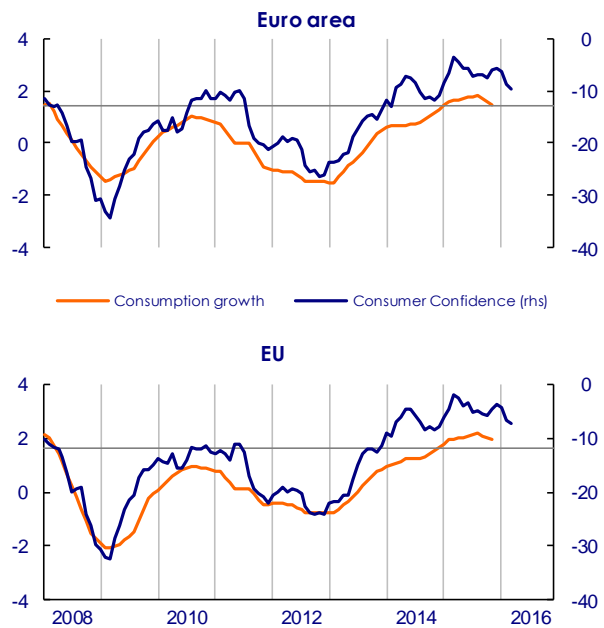


In both areas, the two components of the indicator – managers' views on current order books and their employment expectations – declined.

Focusing on individual countries, the indicator decreased markedly in Spain (-23.6) and, to a lesser extent, in the Netherlands and Poland (-2.8 and -2.2). By contrast, it increased in the UK, France and Italy (+3.8, +2.4 and +1.0). In Germany the indicator was almost unchanged (+0.1).

Since the end of 2015, confidence among **consumers** decreased markedly in both the euro area (-4.0) and the EU (-3.4). In both areas, confidence declined all three months of the quarter but it is well above their long-term averages.

Graph1.1.8: Consumer Confidence indicator



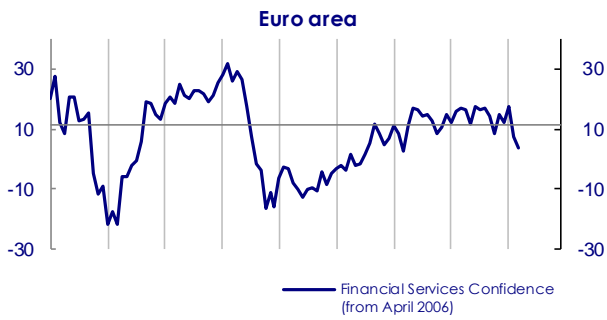
This pattern was backed by the worsening of all four components of the indicator (consumers' expectations about their personal financial situation, their savings, the general economic situation and unemployment). For both areas, consumers' expectations about the general economic situation worsened markedly.

Consumer confidence decreased in all of the seven largest EU Member States, except for Poland (+1.4), where the indicator increased compared to December 2015. The decreases were particularly large in Spain, the Netherlands and Italy (-10.5, -9.9 and -5.2), and less pronounced in the UK, France and Germany (-3.1, -2.4 and -2.0).

Euro area and EU confidence in **financial services** (not included in the ESI) declined sharply over the first quarter of 2016. Confidence in both areas is now below the respective long-term averages.

For both the euro area and the EU, the worsening confidence was caused by negative developments in all three components of the indicator, i.e. managers' views on the past business situation, past and expected demand.

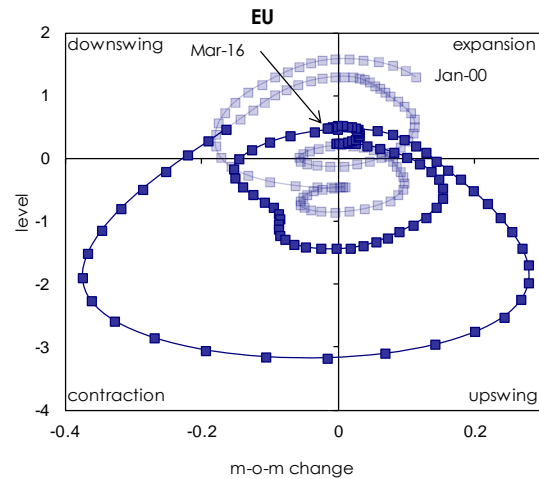
Graph 1.1.9: Financial Services Confidence indicator



climate tracer for construction remains in the upswing area, moving into the direction of the intersection of the two axes, which hints at a stable situation around the historic average level.

Also for the EU, the overall economic climate tracer is located in the expansion quadrant.

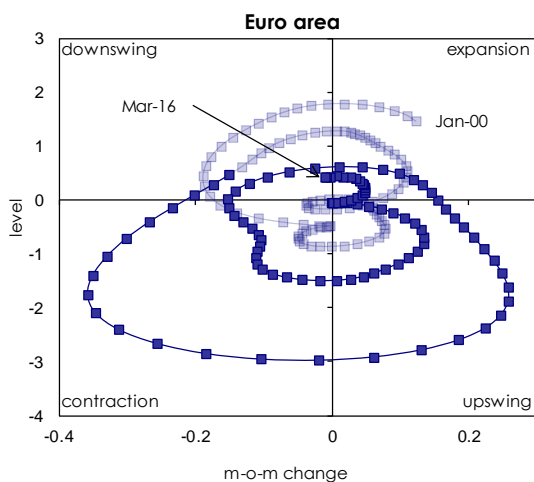
Graph 1.1.11: EU Climate Tracer



Climate tracers

The developments in survey data over the first quarter are illustrated by the evolution of the **climate tracers**. After several months in the expansion quadrant, the economic climate tracer for the euro area moved into the downswing quadrant (see Annex 1 and Annex 2 for further details).

Graph 1.1.10: Euro area Climate Tracer

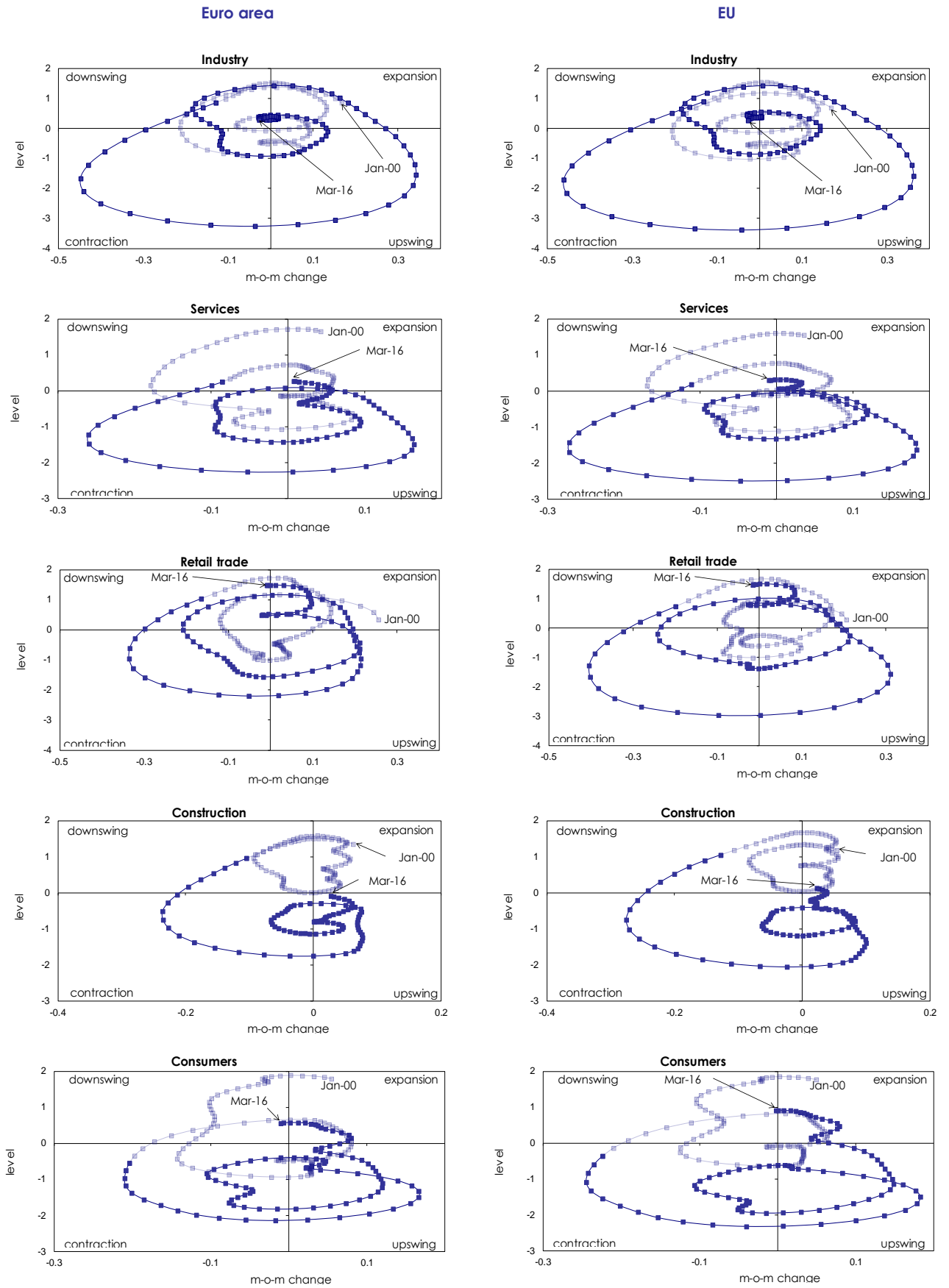


In contrast to the euro area, the movement of the EU economic climate tracer into the downswing area is to a larger extent driven by the services sector than by consumers. The climate tracer for consumers is on the border between the expansion and the downswing areas. The climate tracer for construction is now in the expansion quadrant.

All in all, the survey data and climate tracers point to continued but modest growth in the euro area and the EU at the beginning of 2016.

This movement was driven mainly by the climate tracers for consumers, industry and retail trade. The climate tracer for services is located in the expansion quadrant, moving into the direction of the downswing quadrant. The

Graph 1.1.12: Economic climate tracers across sectors

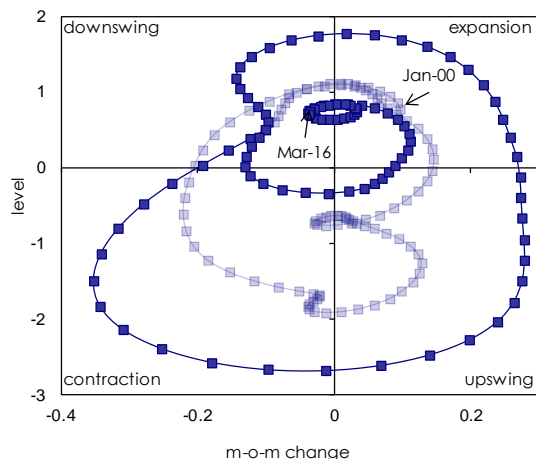


1.2. Selected Member States

During the first quarter of 2016, sentiment has worsened sharply in Italy, Spain and the UK (-5.5, -5.0 and -4.1) and – to a lesser extent – in Germany and the Netherlands (-2.8 and -2.3). In France sentiment was almost unchanged, while it increased somewhat in Poland. The sentiment index scored above its long-term average in Germany, Italy, and the Netherlands, and, more clearly so, in Spain and the UK, while Polish sentiment remained just below its historical average.

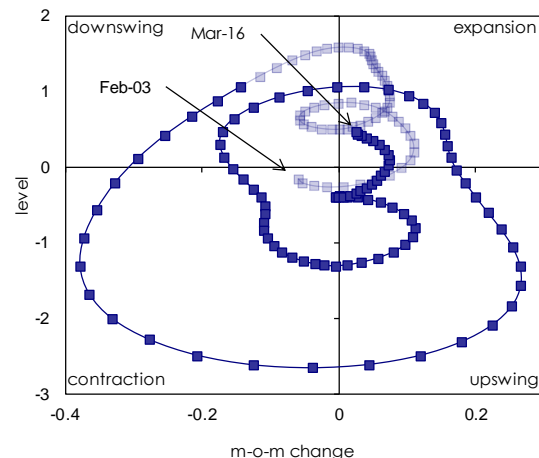
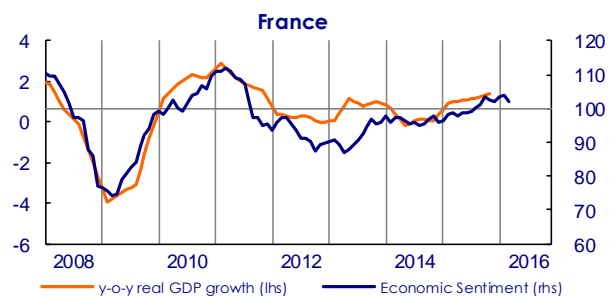
In **Germany**, the ESI decreased in the first quarter of 2016 compared to the end of 2015 (-2.8). It was mainly due to a sizeable drop in January 2016 and the indicator is now closer to its long-term average of 100, at 104.0 points. Confidence worsened among consumers and in all business sectors except for construction, which was more or less unchanged and remained clearly above its long-term average. In terms of the climate tracer, Germany moved into the downswing area, pointing to some cooling down at the beginning of 2016.

Graph 1.2.1: Economic Sentiment Indicator and Climate Tracer for Germany



Economic sentiment in **France** was broadly stable over the first quarter, owing to a marked increase in January, broad stability in February and a significant decrease in March. At 101.9 points, the sentiment index remains slightly above its long-term average of 100. Confidence worsened among consumers, stayed roughly unchanged in the services sector and improved in the other business sectors. The climate tracer remains in the expansion area, but is getting closer to the downswing quadrant.

Graph 1.2.2: Economic Sentiment Indicator and Climate Tracer for France



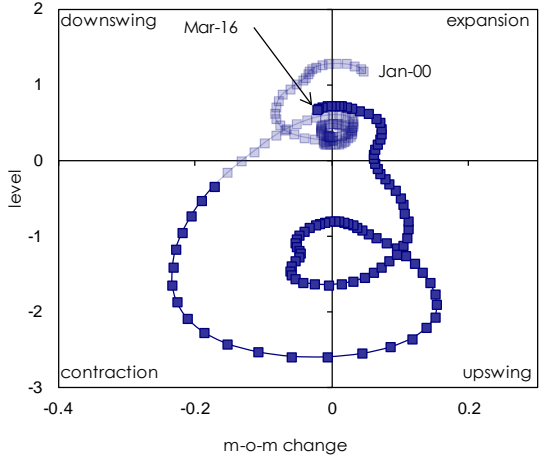
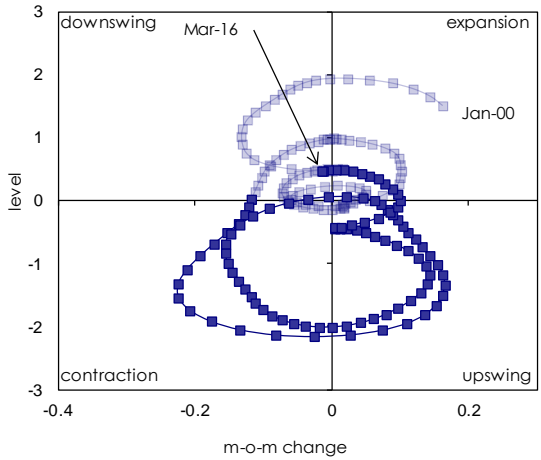
Sentiment in **Italy** dropped in all three months of the quarter, resulting in a substantial decrease compared to December 2015 (-5.5). The sentiment index is now significantly closer to its long-term average of 100, at 103.7 points. At sector level, confidence worsened markedly in the services sector and among consumers, and, less so, in the industry and retail trade sectors, while it improved slightly in the construction sector. The climate tracer is now in the downswing area, thereby pointing to some growth moderation.

The ESI in **Spain** fell in all three months of the quarter, particularly so in January, and the indicator worsened sharply compared to December 2015 (-5.0). Nevertheless, at 106.9 points, the sentiment indicator remains well above its long-term average of 100. Confidence decreased markedly among consumers and in all business sectors; the decline in services was relatively contained. The climate tracer for Spain has moved into the downswing area indicating some growth moderation.

Graph 1.2.3: Economic Sentiment Indicator and Climate Tracer for Italy

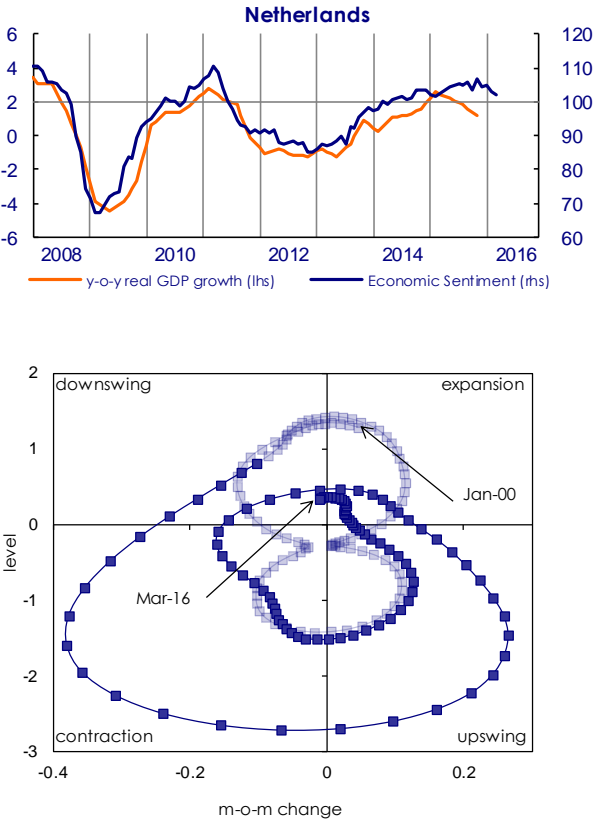


Graph 1.2.4: Economic Sentiment Indicator and Climate Tracer for Spain



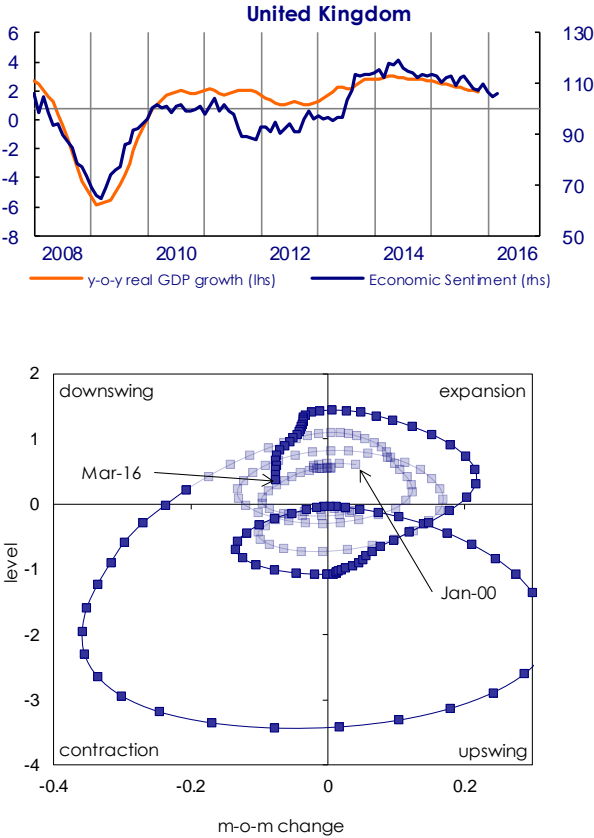
In the **Netherlands**, sentiment worsened over the first quarter of 2016 (-2.3). The ESI increased in January, while it decreased in February and March. At 102.0, the indicator remains slightly above its long-term average. At sector level, sentiment worsened sharply among consumers. Confidence was broadly stable in industry and services, while it decreased in the other business sectors. The climate tracer has moved into the downswing quadrant.

Graph 1.2.5: Economic Sentiment Indicator and Climate Tracer for the Netherlands



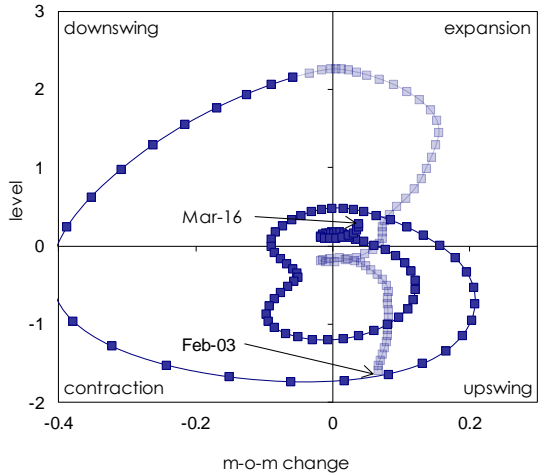
In the **United Kingdom**, sentiment decreased markedly in the first quarter compared to December 2015 (-4.1), due to large drops in January and February that outweighed the milder increase in March. Nevertheless, the indicator remains well above its long-term average of 100, at 106.0. Worsened sentiment resulted to a large extent from a significant downward revision in services confidence. Confidence among consumers and in the retail trade sector deteriorated, while it improved in industry and construction. The climate tracer's deeper position in the downswing quadrant would suggest decelerating growth dynamics.

Graph 1.2.6: Economic Sentiment Indicator and Climate Tracer for the United Kingdom



Sentiment in **Poland** improved in January, and was more or less unchanged in February and March, resulting in an overall upturn compared to December 2015 (+1.2). Still, the ESI remains slightly below its long-term average, at 99.8. At sector level, confidence improved in industry and among consumers and, less so, in services. Confidence remained broadly stable in retail trade, while it worsened in construction. The climate tracer for Poland is located in the expansion area, pointing to sustained growth dynamics.

Graph 1.2.7: Economic Sentiment Indicator and Climate Tracer for Poland



2. SPECIAL TOPIC I: RESULTS FROM QUARTERLY SURVEYS OF MANAGERS IN THE MANUFACTURING INDUSTRY

Introduction

Four times a year - in January, April, July and October - some extra questions are added to the monthly surveys of manufacturing industry, services and construction managers as well as consumers. This special topic presents quarterly results for the manufacturing industry. The main topics covered by the quarterly questions in the manufacturing industry are: *factors limiting production, overall and export order developments, production capacity, capacity utilisation and competitive position on domestic/foreign markets.*

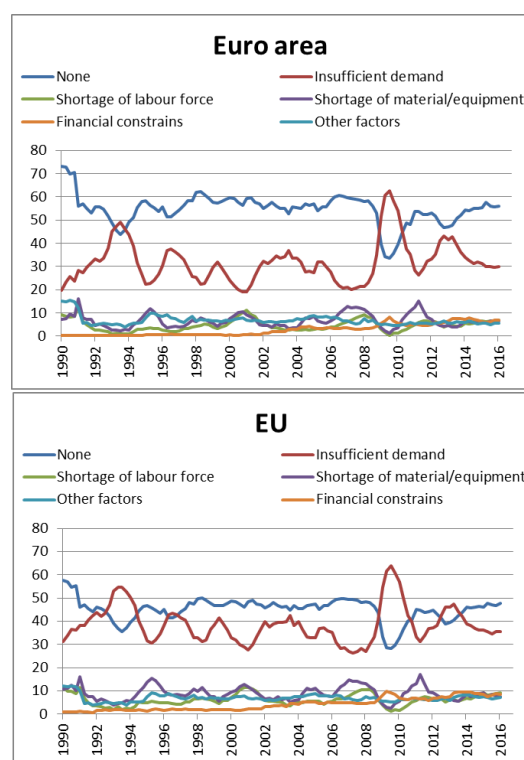
Factors limiting production

Managers in industry are asked to indicate the main factors, if any, which are currently limiting their production or business.

In January 2016, in the euro area more than half (56%) of the surveyed managers in industry reported that there were no factors limiting their production (Graph 2.1). Around 30% of managers indicated that insufficient demand was the main limiting factor to their production. Since the beginning of 2015, the percentage of managers quoting 'insufficient demand' as a factor limiting production has been rather stable around its long-term average and much lower than in the aftermath of the 2008/09 crisis. The other factors – shortage of labour force, shortage of material/equipment, financial constraints and other factors - are far less important and are stated by around 6-7% of the respondents, respectively. Financial constraints peaked at 8.1% in mid-2009 and have reached levels close to or above 7% in 2013/14 following the sovereign debt crisis. They have fallen only very gradually since then. In line with production developments, shortage of material/equipment reached its trough in mid-2009 and peaked at the beginning of 2011. Developments in the EU are qualitatively similar, apart from a lower

share of managers (45%) indicating no factors limiting production and, accordingly, a higher share of managers stating insufficient demand (39%) and other factors as limiting their production.

Graph 2.1: Factors limiting production

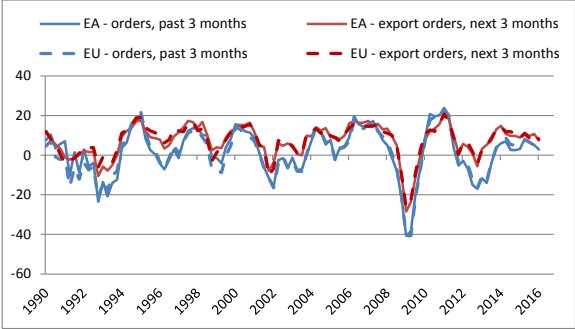


Overall and export order developments

After the trough observed at the end of 2012, managers in the industry sector reported steady improvements in their assessment of past order books and expected export order books up to mid-2014. Since then both indicators fluctuated around their long-term averages. In January 2016, both managers' assessment of past order books and their export order

expectations dropped compared to October 2015 (Graph 2.2). For past order books, this was the third consecutive quarter seeing lower assessments.

Graph 2.2: Overall and export order developments

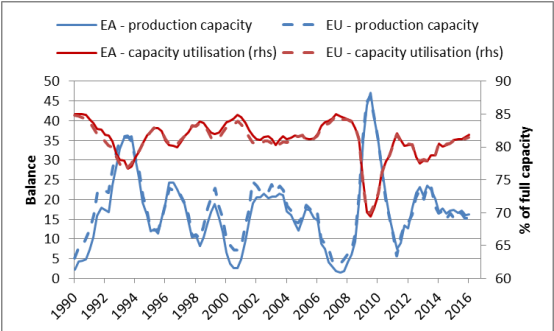


Production capacity and capacity utilisation

Managers are asked to give their assessment of the current production capacity considering current order books and expected changes in demand over the coming months. The answer options are 'more than sufficient'/'sufficient'/'not sufficient'. Managers are also requested to evaluate quantitatively at what level - as a percentage of full capacity - their company is currently operating.

The two series historically exhibit a high negative coincident correlation (-0.92 for the euro area, and -0.89 for the EU). Graph 2.3 clearly depicts this pattern: the troughs observed in the capacity utilisation were accompanied by peaks in the assessment of (unused) production capacity.

Graph 2.3: Production capacity and capacity utilisation

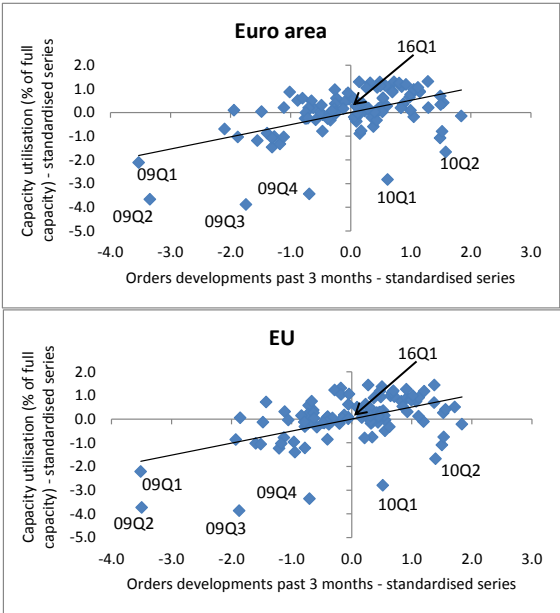


The latest available data signal that – in both the EU and the euro area – views on excessive production capacity have remained broadly stable around their long-term average since the beginning of 2014. Over the same period, quantitative capacity utilisation estimates have been on a (weak) upward trend and, at 81.5 (EU) and 81.9 (euro area), currently stand slightly above their long-term averages (roughly 81%).

Is capacity utilisation consistent with order developments?

Looking at the historical relationship between capacity utilisation and order developments over the past 3 months (Graph 2.4), it appears that - for both the euro area and the EU - managers' estimates of capacity utilisation are generally consistent with their assessment of order developments. The two series are well correlated and order book developments are generally leading capacity utilisation. In addition, the relationship between the two series is rather stable over time. Only during the post-crisis period from mid-2009 to mid-2010 were capacity utilisation estimates more subdued than what assessments of recent orders would have suggested. A possible explanation for this temporary divergence is that during this period manufacturers were emptying their stocks to meet the rebounding demand, while cautiously keeping production and thus capacity utilisation low.

Graph 2.4: Order developments and capacity utilisation



Currently, for both the euro area and the EU, the level of capacity utilisation is fully consistent with managers' assessment of orders.

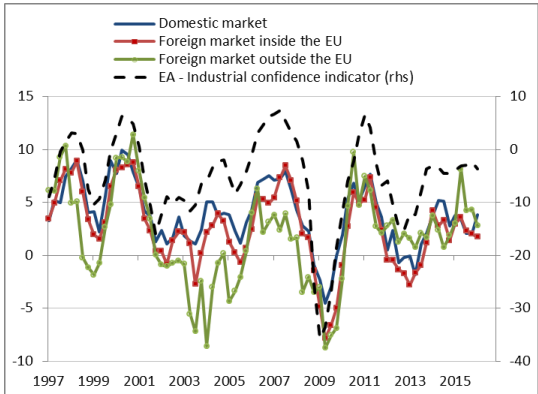
Competitive position on the market

Finally, manufacturing managers are asked how their competitive position on domestic and foreign markets (inside and outside the EU) has developed over the past 3 months. The possible responses are 'improved', 'remained unchanged' or 'deteriorated'.

The determinants of international competitiveness are numerous and multifaceted. Usually, the competitiveness of a country is assessed through measures of price and cost differentials with respect to trading partners. However, such measures do not take into account other, non-cost related characteristics of goods, such as changes in quality and variety.

Since managers can be expected to have a comprehensive view of their competitive position, based not only on cost and price factors, the survey data on perceived competitiveness can potentially provide a direct, timely and more comprehensive picture of competitiveness developments that can complement the standard measures of international cost competitiveness.

Graph 2.5: : Perceived competitive position and industry confidence indicator; euro-area; percentage balance



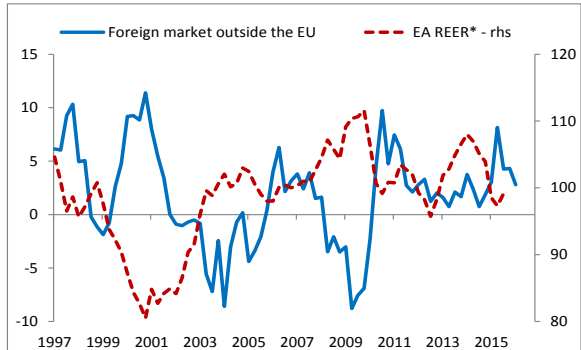
At euro-area level, managers reported that their competitive position on foreign markets inside and outside the EU has deteriorated since mid-2015, while their competitive

position on the domestic market remained broadly stable during the last year (Graph 2.5). To the extent that price competition with foreign (non-euro-area) producers is tougher on external than on domestic markets, this is consistent with the appreciation of the euro since November 2015 and its negative impact on price/cost competitiveness of euro-area manufacturers.

Interestingly, the series on perceived changes in competitive positions largely follow the developments of the industrial confidence indicator, which itself is highly correlated with industrial output growth. This suggests that managers do not fully recognize if a perceived or expected loss in sales comes from a general market contraction or from a firm-specific decrease of market shares, i.e. a worse performance compared to competitors. This being said, the lower degree of correlation in the case of the assessment of competitive developments on foreign markets outside the EU - in particular over the last year - points to some complementary information related to developments outside the EU.

The trend in the perceived competitive position outside the EU is indeed related to the relative cost index of competitiveness, measured as the nominal effective exchange rate deflated by unit labour costs for the total economy (REER) (Graph 2.6). With few exceptions, there is a relatively strong (negative) co-movement between the two series.

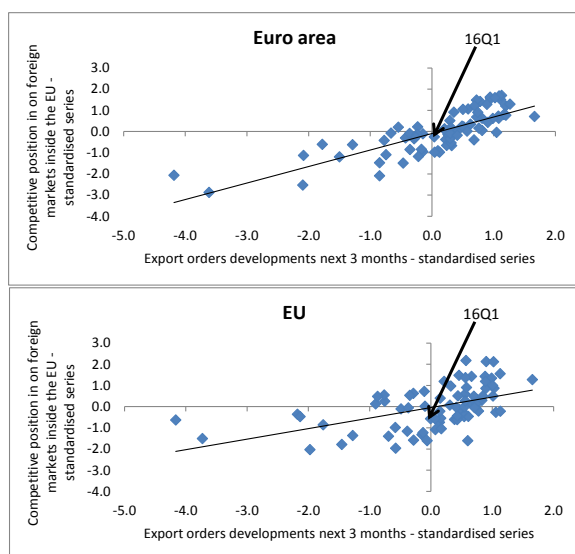
Graph 2.6: : Perceived competitive position outside the EU, and the relative costs index of competitiveness; euro-area



* REER: Quarterly Real Effective Exchange Rates vs IC37 (2005 = 100) (deflated by nominal unit labour cost, total economy).

In interpreting these results and the differences between the two curves, it is important, however, to keep in mind that a one-to-one correspondence is not to be expected, given that the survey-based series of perceptions should measure a much broader concept of competitiveness than the index of cost competitiveness.

Graph 2.7: Perceived competitive position in foreign markets inside the EU, and expected export order developments



The competitiveness position on foreign markets inside the EU is also consistent with developments in managers' export order expectations (Graph 2.7). Generally, there is a strong co-movement between the two series and correlation analysis shows that managers' export order expectations are leading their assessment of their competitive position by one quarter (correlation coefficient maximised at around 0.86 in the euro area and 0.6 in the EU).

Conclusions

Quarterly results on industry managers' perceptions of factors limiting their production, overall and export order developments, production capacity, capacity utilisation and competitive position on domestic and foreign markets (both inside and outside the EU) give potentially valuable supplementary information to the monthly survey results, by offering a slightly more long-term, or 'structural' perspective.

Recent developments in the quarterly survey questions broadly support the picture conveyed by the monthly survey results: in both the euro area and the EU, the percentage of managers facing demand as a factor limiting production, managers' appraisal of production capacity, their assessment of past order books and expectations of future export orders have remained fairly close to their levels of mid-2014, indicative of a still rather moderate economic recovery. The last two, order-related, indicators have been showing some weakening recently, in line with decreasing monthly readings of industry confidence in early 2016. At the same time, quantitative estimates of capacity utilisation have been on a (mild) upward trend and now stand fractionally above long-term average. Finally, euro-area managers reported that their competitive position on foreign markets inside and outside the EU has been deteriorating since mid-2015, which might partly be attributable to the recent period of euro appreciation.

The quarterly survey results are also generally internally consistent: the qualitative assessment of production capacity is mirroring quantitative capacity utilisation estimates and, with the exception of the recovery phase from the 2008/09 crisis, capacity utilisation estimates are consistent with the assessment of order books. Also developments in managers' export order expectations are consistent with their assessment of their competitiveness position on foreign markets.

Finally, in general, there is a rather strong link between perceived competitiveness and price/cost competitiveness, as measured by the REER. Relative price/cost developments thus appear to be an important driver of perceived competitiveness. However, the survey-based series is not restricted to an assessment of prices/costs but comprises changes in quality and variety of goods.

3. SPECIAL TOPIC II: RADAR CHARTS – A TOOL FOR PRESENTING TRENDS IN SECTORAL SURVEY DATA

Introduction

In this special topic a new graphical tool, a so called radar chart, is introduced in order to display the developments of the business and consumer survey (BCS) indicators for the EU, the euro area (EA) and the large EU Member States. One advantage of using radar charts for BCS data is that they can illustrate and compare developments across sectors and help identify the driving forces behind the developments of the composite Economic Sentiment Indicator. The radar charts proposed here also display recent developments of the BCS indicators compared to their historical averages, thereby putting recent confidence levels into historical perspective.

The data and the graphical set-up

The data used in the radar charts are the *Economic Sentiment Indicator (ESI)*, the *Industry Confidence Indicator (INDU)*, the *Construction Confidence Indicator (BUIL)*, the *Services Confidence Indicator (SERV)*, the *Retail Trade Confidence Indicator (RETA)* and the *Consumer Confidence Indicator (CONS)* for the EA/EU and the large EU Member States Germany, France, Italy, Spain, the Netherlands, the United Kingdom and Poland. The number of indicators used here results in hexagonal radar charts. More disaggregated data, i.e. data on individual survey questions, could in principle also be used in the radar charts. However, the aggregation level used here is considered suitable for a bird's-eye view on the developments in the BCS data.

The radar charts thus display the ESI along the five sector-specific confidence indicators. The ESI is a composite index, targeting overall economic growth developments, and is composed of the 15 survey questions that enter into the computation of the sectoral confidence indicators. The industry questions receive the highest weight (40%), followed by services questions (30%) and consumer questions

(20%), while construction and retail trade questions receive the lowest weights (5% each).¹ Changes of the confidence indicators for construction and retail trade will thus have a smaller impact on the aggregate ESI due to the lower weights.

All data in the radar charts are quarterly averages of monthly series, in order to smooth month-on-month volatility and better capture the trend developments of the series. The series are normalised to a mean of 100 and a standard deviation of 10.² The scale of the radar charts is set from 70 to 130, which is in line with the historical variation of the survey results. The latest quarterly outcomes are compared both to the previous quarterly outcomes and to the historical averages (= 100) of the specific indicator series.

The historical averages are in general calculated from 1990q1 onwards. However, the series for the services indicator start between 1990q1 (France) and 2003q1 only, and all the indicator series for Poland start between 1993q4 and 2003q1. This means that not all the data are fully comparable within the charts (due to the services indicator, except for France) and between the charts (due to Poland). The extent of this drawback is however relatively contained. For instance, the historical average for the ESI in the EA is 101.0 from 1998q1 onwards and 98.7 from 2003q1 onwards, as

¹ For more information about the construction of the ESI and the five sector-specific indices, see European Commission DG ECFIN, The Joint Harmonised EU Programme of Business and Consumer Surveys – User Guide, March 2016.

² The EU and EA aggregates are weighted averages of the country-specific series and are standardised (to a mean of 100 and a standard deviation of 10) afterwards. The position of the EU/EA indicators in the radar charts does therefore not exactly correspond to the average of the country-specific positions (average of already standardised country-specific series).

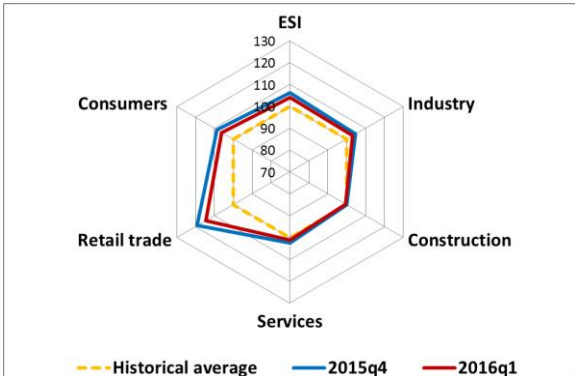
compared to 100.0 from 1990q1 onwards. The interpretation of a given observation against the average is thus not significantly affected by which period is given preference.

Interpretation of the radar charts

One general interpretation of the radar charts presented here is that if the hexagon spanned by the BCS indicators is clearly larger than the area representing the historical average it is a sign of a booming economy, while if it is clearly smaller than the historical average it is a sign of a contracting economy. Clearly, some caution is warranted. Firstly, such interpretation requires that the BCS indicator series are well correlated with the (overall and sectoral) economic developments in the EU Member States and in the EA/EU aggregates. Secondly, the historical averages could be calculated over a too short time period to obtain an average representing a truly neutral stance of the economy. For the radar charts displayed here this could for instance be the case for some of the indicator series for Poland.

The radar chart for the **euro area** (see Graph 3.1) indicates that the above-average current level of the ESI is to a large extent driven by consumption-related survey results, i.e. consumers and retail trade and, to a lesser extent, by industry. Particularly the level of retail trade confidence would suggest booming household spending. The survey results for construction and services are more or less in line with their historical averages. The chart also shows that while all sectors contributed to the decline in the ESI between the fourth quarter of 2015 and the first quarter of 2016, it is the retail trade sector that has receded most.

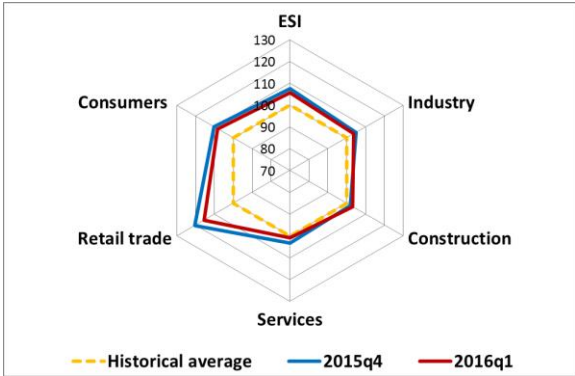
Graph 3.1: Euro area



Note: A development away from the centre reflects an improvement of the confidence indicator. The ESI is computed with the following sector weights: industry 40%, services 30%, consumers 20%, construction 5% and retail trade 5%. The series are normalised to a mean of 100 and a standard deviation of 10. The historical averages are mainly calculated from 1990q1.

The radar chart for the **EU** shows similar patterns as for the EA and the conclusions for the EA hold in general for the EU as well (see Graph 3.2). A slight deviation from the EA is the EU construction sector, where confidence did not drop in the first quarter compared to 2015q4.

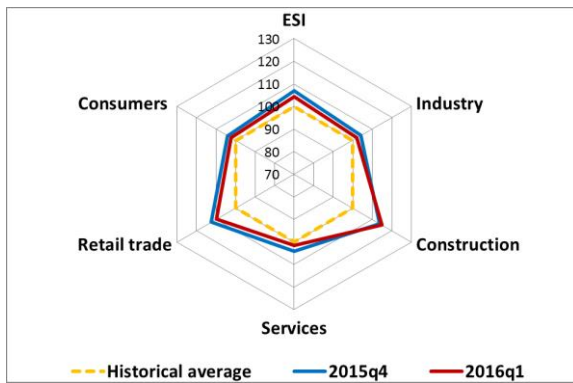
Graph 3.2: EU



Note: See note to Graph 3.1.

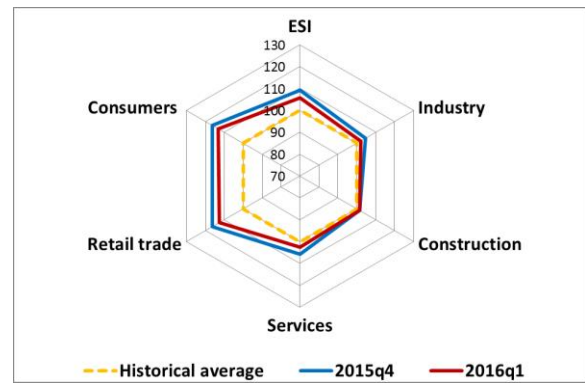
The radar chart for **Germany** displays that all of the five sectors are scoring above their historical averages and thus contributing to the (still) relatively high level of the ESI (see Graph 3.3). Recent decreases compared to the end of 2015 have sent confidence levels for industry, services and consumers closer to their historical averages. The levels of retail and construction confidence point to booming and, in the case of construction, further improving sectors. The chart indicates that all other sectors contributed to the decline in the ESI in the first quarter.

Graph 3.3: Germany



Note: See note to Graph 3.1.

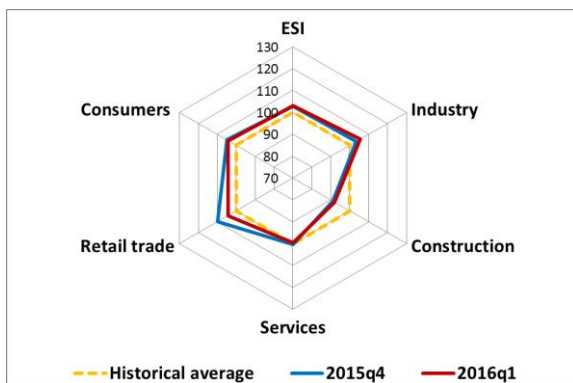
Graph 3.5: Italy



Note: See note to Graph 3.1.

The radar chart for **France** displays that the ESI is slightly above its long-term average due to the relatively high confidence for industry, retail trade and among consumers (see Graph 3.4). The ESI stayed almost unchanged in the first quarter mainly since higher confidence in industry and, to some extent, construction compensated for slightly lower levels among consumers, in services and, most notably, in retail trade. Construction confidence is still markedly below its historical average.

Graph 3.4: France

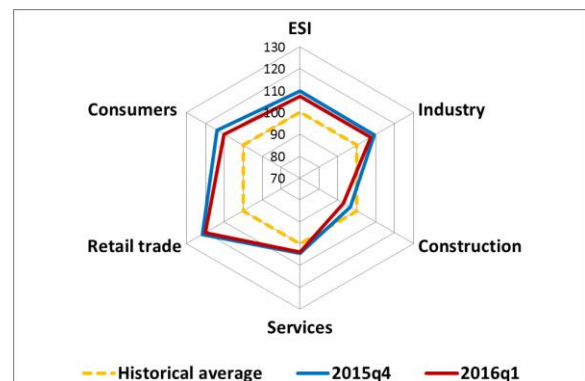


Note: See note to Graph 3.1.

The radar chart for **Italy** reveals that confidence is above historical average in all sectors but construction, but it is the high levels of consumer and retail trade confidence that contribute most to the relatively high level of the ESI (see Graph 3.5). At the same time, in terms of recent developments, all sectors except construction contributed to the decline of the ESI in the first quarter.

The radar chart for **Spain** shows that the relatively high level of the ESI is driven by all sectors except construction (see Graph 3.6). Particularly the level of retail trade confidence points to booming consumer spending. At the same time, the worsening of the ESI in the first quarter is largely driven by receding consumer confidence, apart from further deteriorating confidence in the construction sector.

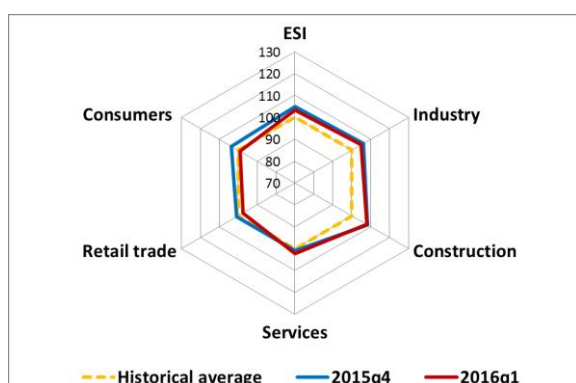
Graph 3.6: Spain



Note: See note to Graph 3.1.

The radar chart for the **Netherlands** indicates that confidence levels are close to or below their historical averages in all sectors except for industry and construction (see Graph 3.7). Thus, it is thanks to these two sectors that the ESI is still scoring above its long-term average. The drop of the ESI in the first quarter of 2016 was led by deteriorating consumer and retail trade confidence.

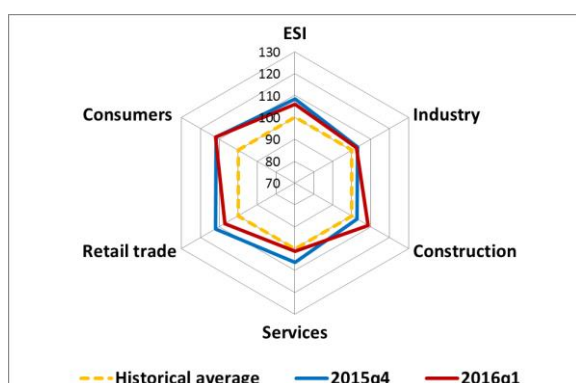
Graph 3.7: Netherlands



Note: See note to Graph 3.1.

The radar chart for the **United Kingdom** shows that the high level of the ESI is mostly due to consumer, retail trade and construction confidence (see Graph 3.8), while confidence levels in industry and services are now very close to their historical averages. The chart also shows that it is the retail trade and services sectors that drove the ESI down in the first quarter of 2016, while confidence in the construction sector improved against the trend.

Graph 3.8: United Kingdom

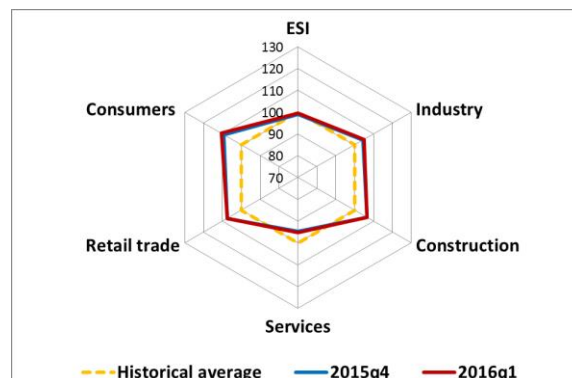


Note: See note to Graph 3.1.

The radar chart for **Poland** is harder to interpret since the sector confidence levels are not adding up to the level of the ESI.³ While all sectoral confidence levels except services can be seen to be clearly above their historical averages, the

ESI is scoring just below its long-term average. Furthermore, there are only very minor changes in the confidence levels in the first quarter of 2016 as compared to the end of 2015.

Graph 3.9: Poland



Note: See note to Graph 3.1.

Concluding remarks

The radar chart proposed here is a complementary tool to other charts, tables or other representations displaying the BCS data. It aims to enable the reader to understand the developments in the data at a single glance, by offering a bird's-eye on several dimensions. It illustrates and compares developments across sectors and thus helps to identify the driving forces behind the developments of the composite Economic Sentiment Indicator. It also displays the recent developments of the BCS indicators compared to their historical averages, thereby putting recent confidence levels into historical perspective. The new tool will be integrated in forthcoming 'European Business Cycle Indicators' publications to describe developments at the EU, euro area and country levels.

³ This is mainly due to the shorter availability of results from the services survey and the resulting issue of different periods for the calculation of the historical averages.

ANNEX

Reference series

Confidence indicators	Reference series from Eurostat, via Ecwin (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 at: [Methodological guides - Surveys – DG ECFIN website](#)
Long time series (ESI and confidence indices) are available at: [Survey database – DG ECFIN website](#)

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; 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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