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European Business Cycle Indicators

3rd Quarter 2019

Special topic

- Additional results from quarterly business surveys – focus on trends in manufacturing

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OVERVIEW

Recent developments in survey indicators

- The Economic Sentiment Indicators (ESI) for the euro area (EA) and the EU declined further in the third quarter of 2019. Shedding 1.6 (EA) and 2.3 (EU) points, the indicator is still scoring slightly above its long-term average in the EA (101.7 points) while it has hit its 100-points long-term average in the EU.
- The EA and the EU registered drastic losses in industry and construction confidence (the latter remaining at historically high levels, though). Confidence decreased also in services, while signals from consumers remained broadly unchanged. In retail trade, sentiment also stayed virtually flat in the EA, while it edged down in the EU.
- Focussing on the seven largest EU economies, 2019-Q3 brought sharp sentiment losses in the UK (-7.1) and Germany (-3.2), as well as small declines in the Netherlands (-1.2) and Poland (-0.9). The ESI remained broadly stable in France (-0.2), Italy (-0.3) and Spain (-0.6).
- Capacity utilisation in manufacturing decreased in both the EA and the EU by, respectively, 0.9 and 1.0 percentage points (pp) compared to the last survey wave in April. Currently, capacity utilisation is at 81.9% (EA) and 81.6% (EU), i.e. still somewhat above the two regions' respective long-term averages of around 81%. In services, capacity utilisation decreased by 0.3 (EA) / 0.7 (EU) points. At 90.5%, capacity utilisation in the euro area remained above its long-term average of just below 89%. At 89.3% in the EU, however, the rate is approaching its long-term average.

Special topic: Additional results from quarterly business surveys – focus on trends in manufacturing

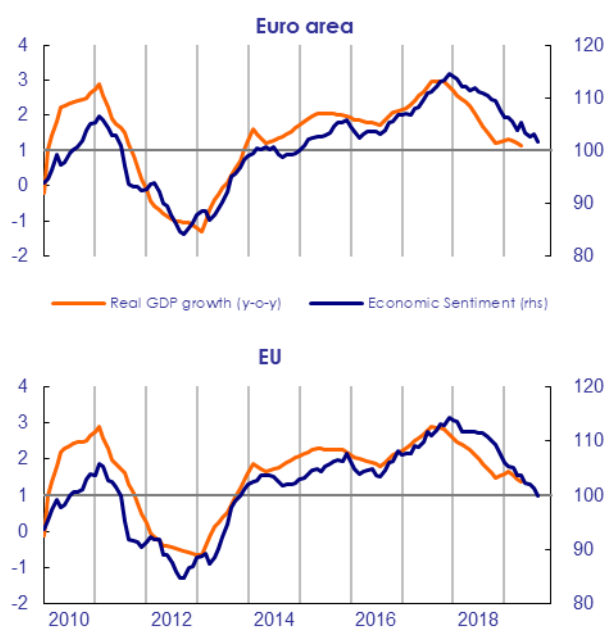
This special topic presents additional results from the quarterly business surveys, with a focus on the euro area manufacturing industry. Four times a year - in January, April, July and October - some extra questions are added to the monthly survey, including questions on factors limiting production, overall and export order developments, production capacity, capacity utilisation and the competitive position on domestic/foreign markets. The quarterly results are internally consistent and broadly support the picture conveyed by the monthly surveys: 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 worsened since early 2018. Consistently, quantitative estimates of capacity utilisation rates have been on a downward trend. Finally, euro-area managers reported that their competitive position on foreign markets inside and outside the EU has been deteriorating since the beginning of 2018. Overall, the quarterly results reinforce the picture of a manufacturing-led downturn, while the available quarterly readings for construction and, to some extent, services still point to some resilience.

1. RECENT DEVELOPMENTS IN SURVEY INDICATORS

1.1. EU and euro area

The Economic Sentiment Indicators (ESI) for the euro area (EA) and the EU declined further in the third quarter of 2019, continuing the downward trend that had started in early 2018. Shedding 1.6 (EA) and 2.3 (EU) points on the quarter, the indicator is still scoring slightly above its long-term average in the EA (101.7 points) while it has hit its 100 points long-term average in the EU.

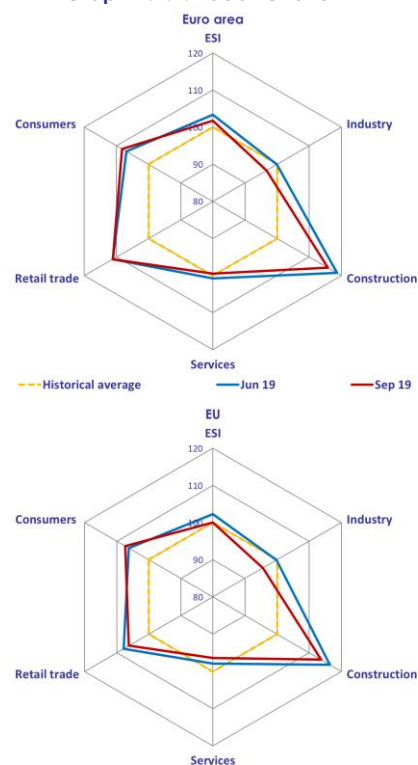
Graph 1.1.1: Economic Sentiment Indicator



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.

Developments in the ESI are in line with those in Markit Economics' PMI Composite Output Index and the Ifo Business Climate Index (for Germany), both of which continued to lose ground over the quarter.

Graph 1.1.2: 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 1990q1. For more information on the radar charts see the Special Topic in the 2016q1 EBCEI.

From a sectoral perspective (see Graph 1.1.2), both the EA and the EU registered drastic losses in industry and construction confidence, the latter remaining at historically high levels, though. Albeit to a lesser extent, confidence decreased also in services, while it remained broadly stable among consumers. In the EA, confidence remained flat also in retail trade, while it decreased in the EU.

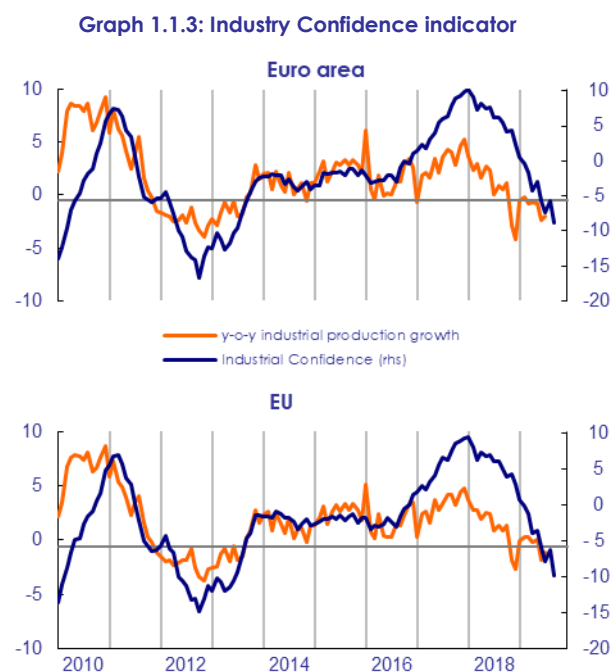
In terms of levels, EA and EU confidence indicators in retail trade, construction and among consumers remain well above their respective long-term averages. Industry and services confidence, by contrast, has sunken below long-term average.

Focussing on the seven largest EU economies, 2019-Q3 brought sharp sentiment losses in the

UK (-7.1) and Germany (-3.2), as well as smaller declines in the Netherlands (-1.2) and Poland (-0.9). The ESI remained broadly stable in France (-0.2), Italy (-0.3) and Spain (-0.6).

Sector developments

Industry confidence booked another sharp decline in both the EA (-3.2) and the EU (-3.9). In line with the indicators' steady losses since the beginning of 2018, both are now below their long-term average levels, as illustrated in Graph 1.1.3. Reflecting the deterioration in industry confidence, the sectoral climate tracer for industry moved to the contraction quadrant in the EA and the EU (see Graph 1.1.4).

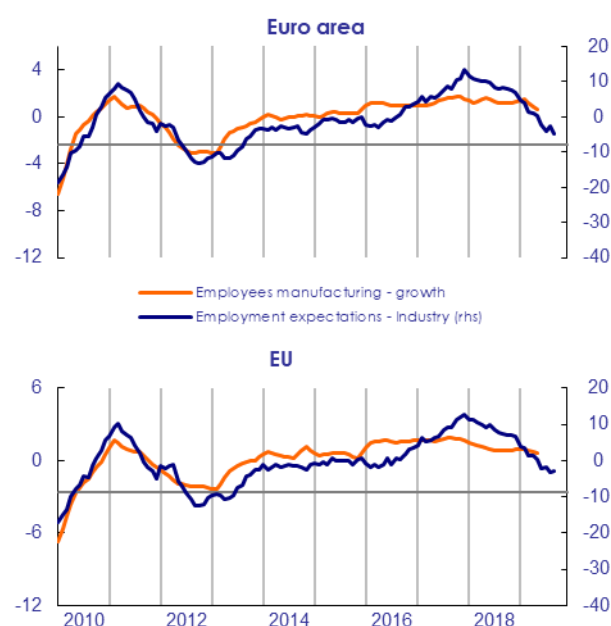


The drop in confidence in the EA was caused by a substantial worsening of managers' appraisal of their order books and a moderate decline of their production expectations, while their assessment of the stock of finished products remained broadly stable. In the EU, the fall in confidence was propelled by a sharp deterioration of managers' production expectations, appraisals of overall order books and, to a lesser extent, assessments of the stocks of finished products.

Of the components not included in the confidence indicator, both managers' views on past production and export order books deteriorated strongly.

In line with the worsening assessment of demand and production, EA and EU managers' selling price expectations registered strong declines during 2019-Q3. Similarly, **industry managers' employment expectations** have not escaped the general downward trend. While the steepness of the decline has not accelerated compared to the first half of 2019, the balance of positive over negative employment intentions turned negative in June already and has been worsening further over the third quarter. (see Graph 1.1.4).

Graph 1.1.4: Employment - Industry Confidence indicator



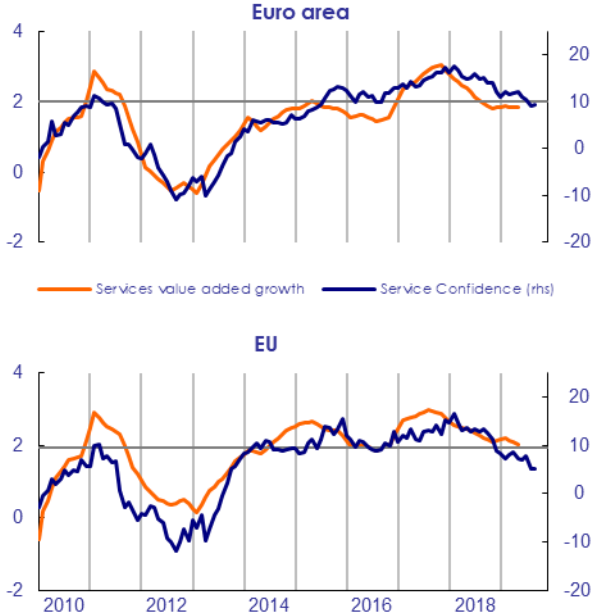
Among the seven largest EU Member States, industry confidence plunged in the UK (-12.7) and Germany (-6.1), while Italy (-1.5) and France (-1.4) experienced more moderate decreases. Spain (+0.2), the Netherlands (+0.7) and Poland (-0.9) saw broadly stable industry sentiment.

According to the quarterly manufacturing survey (carried out in July), **capacity utilisation in manufacturing** decreased in both the EA and the EU by, respectively, 0.9 and 1.0 percentage points (pp) compared to the last survey wave of April. Currently, capacity utilisation is at 81.9% (EA) and 81.6% (EU), i.e. still somewhat above the two regions' respective long-term averages of around 81%.

Having stayed broadly stable during in the first half of 2019, the third quarter of 2019 saw a decrease in **services confidence**. The indicator

fell by 1.5 points in the EA, and by 1.8 points in the EU. Below its long-term average in the EU already since December of last year, services confidence has now also undercut its long-term average in the euro area (see Graph 1.1.5).

Graph 1.1.5: Services Confidence indicator



In the euro area, the easing of confidence resulted mainly from a decrease in both past and expected demand, while managers' views on the past business situation did not change significantly. In the EU, the decline in the confidence indicator resulted from managers' more pessimistic demand expectations, while their assessment of the past business situation and demand remained broadly stable.

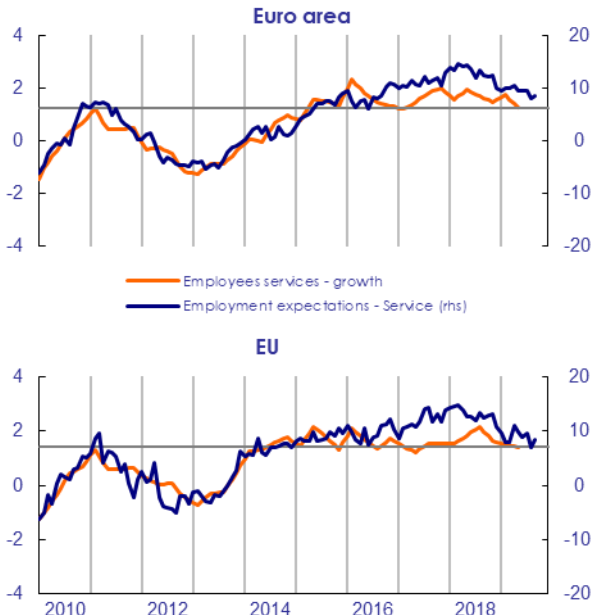
Employment expectations in services continued to decrease from their early-2018 peak levels, though more hesitantly and on a smaller scale than in industry (see Graph 1.1.6). Faltering demand expectations were reflected in lower selling price expectations in both the EA and, particularly, the EU.

Focussing on the seven largest EU economies, services confidence decreased strongly in Germany (-4.9), the Netherlands (-3.4), and the UK (-3.1) and, to a lesser extent, in France (-1.6). Sentiment stayed broadly flat Italy (0.0) and Poland (-0.5), while it improved in Spain (+2.9).

Capacity utilisation in services, as measured by the quarterly survey in July, decreased by

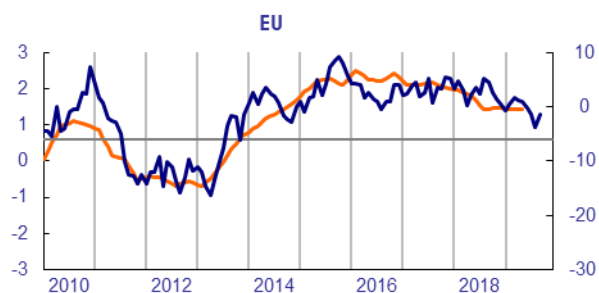
0.3 (EA) / 0.7 (EU) points. At 90.5%, capacity utilisation in the euro area remained above its long-term average of just below 89% (calculated from 2011 onwards). At 89.3% in the EU, however, the rate is approaching its long-term average.

Graph 1.1.6: Employment - Services Confidence indicator



Retail trade confidence in the EA was stable in 2019-Q3 (0.0) for the third quarter in a row, while it lost 1.2 points in the EU. In a longer-term context, at least for the EA, the latest developments mean a stabilisation well above the indicator's long-term average, although down slightly compared to the levels seen between late 2016 and early 2018 (see Graph 1.1.7).

Graph 1.1.7: Retail Trade Confidence indicator



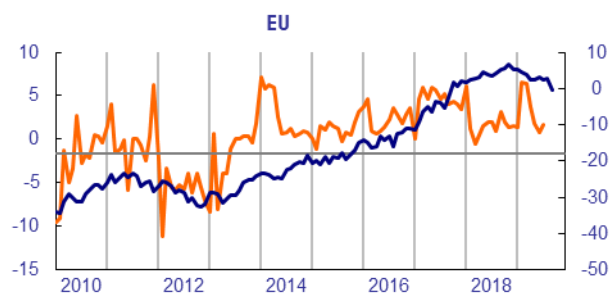
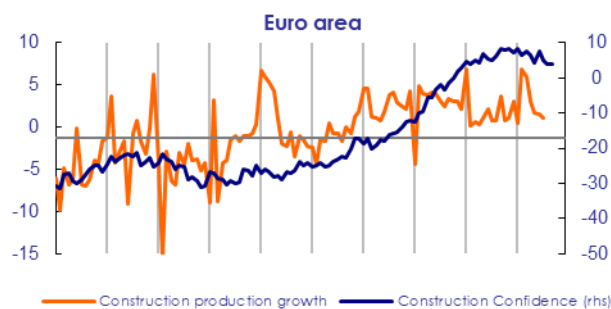
The deterioration in EU confidence was driven by retailers' more pessimistic views on the future business situation, while their appraisals of the level of stocks improved slightly and their assessment of the past business situation stayed broadly stable. In the EA, less optimistic expectations about the business situation were counterbalanced by small improvements in the assessment of the past business situation and the level of stocks.

For the seven largest EU economies, confidence declined strongly in the UK (-6.5), Germany (-5.1) and, to a lesser extent, Spain (-2.4), Poland (-2.1) and the Netherlands (-1.2). By contrast, sentiment improved in Italy (+2.6) and France (+1.8).

Construction confidence decreased strongly in both the EA (-3.8) and the EU (-3.8). The latest figures suggest that the sector's forceful recovery since 2013/2014 has reached its peak around late 2018/early 2019 and has now given way to a downward adjustment (see Graph 1.1.8). This being said, the level of confidence in construction is still very high from a historical perspective.

At component level, in both areas, managers' views of order books and **employment expectations worsened**, where the decrease was particularly strong in the latter.

Graph 1.1.8: Construction Confidence indicator

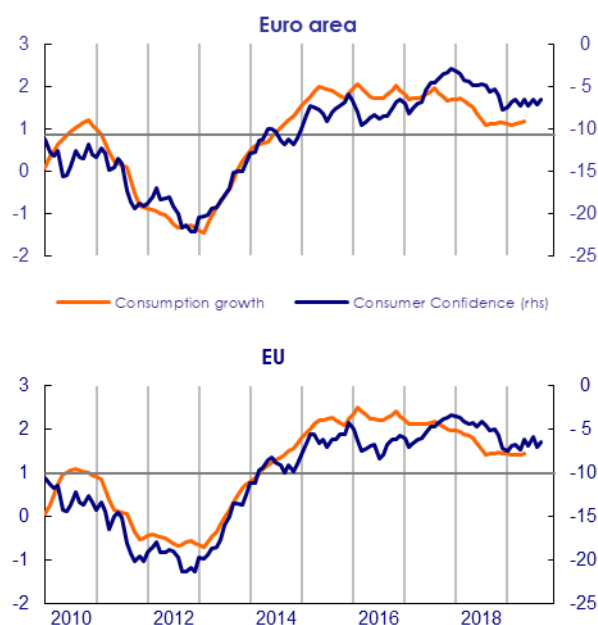


Among the seven largest EU economies, construction confidence decreased dramatically in Spain (-17.2) and the Netherlands (-10.0) and, to a lesser extent, in the UK (-3.1), Germany (-3.0) and Poland (-1.2). Meanwhile, France (+1.3) saw confidence grow, while confidence remained virtually stable in Italy (+0.5).

In line with retailers' stable business perceptions, **consumer confidence** has continued its sideward movement over the third quarter. In a longer-term perspective, the minor changes (of +0.7 in the EA and +0.5 in the EU) do not visibly alter the stable level that the indicator has maintained since the beginning of 2019, following the correction witnessed during 2018. Thus, consumer confidence remained comfortably above its long-term average (see Graph 1.1.9).

Looking at the individual components of consumer confidence, consumers were more optimistic about their past and future personal financial situation, while their intentions to make major purchases remained broadly unchanged. In the EA, also consumers' expectations about the future general economic situation remained broadly stable, while they worsened in the EU.

Graph 1.1.9: Consumer Confidence indicator



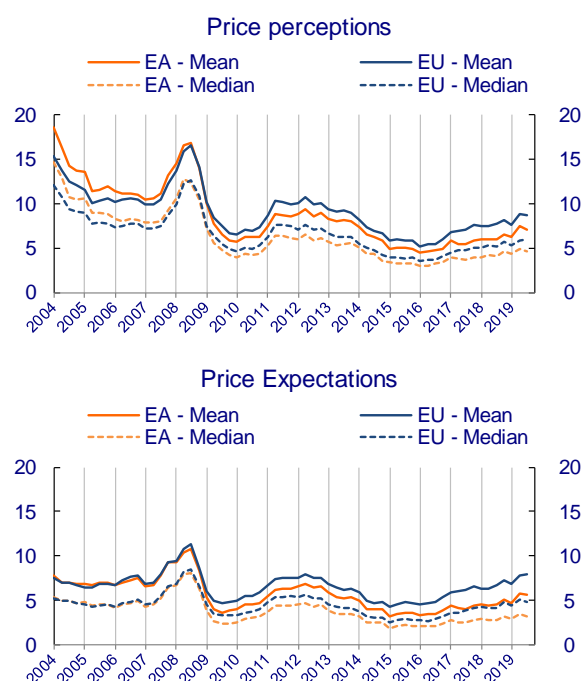
Consumer sentiment improved markedly in France (+3.7), while it stayed virtually unchanged in Germany (+0.7), the UK (+0.7), Italy (+0.2) and Poland (-0.6). Confidence eased in the Netherlands (-1.3) and, more markedly, in Spain (-4.1).

In both the EU and the euro area, the mean of **consumers' quantitative price perceptions** decreased somewhat in 2019Q3 compared to 2019Q2, while the median decreased in the euro area and remained broadly unchanged in the EU. Consumers' price expectations over the next 12 months declined slightly in the euro area, where both the mean and the median fell marginally. In the EU, the median decreased slightly too, while the mean edged up in the third quarter of the year (see Graph 1.1.10).^{1 2}

The same image appears when looking at the socio-economic breakdown categories. In most of the categories the mean and the median show a slight decrease for perceptions, while for expectations the results are more mixed (see

tables A.1.1 and A.1.2 in the Annex to section 1).

Graph 1.1.10: Euro area and EU quantitative consumer price perceptions and expectations



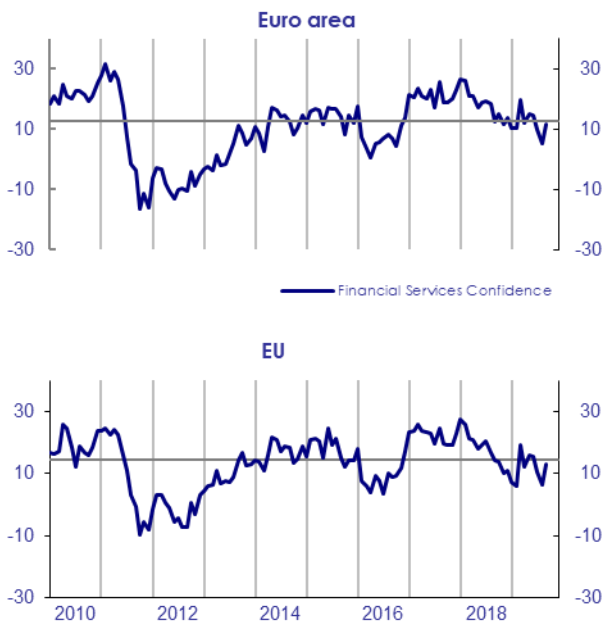
The **financial services** confidence indicator (not included in the ESI) was rather volatile over the quarter, and all in all lost 3.1 (EA) / 2.7 (EU) points compared with the end of the second quarter. In both regions, the indicator scored just below its long-term average at the end of Q3 (see Graph 1.1.11).

EA and EU financial managers were less optimistic about past demand, and, in particular, the past business situation, while their expectations about future demand remained virtually unchanged.

¹ The effect of the change in mode in Germany on the mean of the quantitative inflation expectations is estimated to be around +0.4 pp in the EU and +0.5 pp in the euro area.

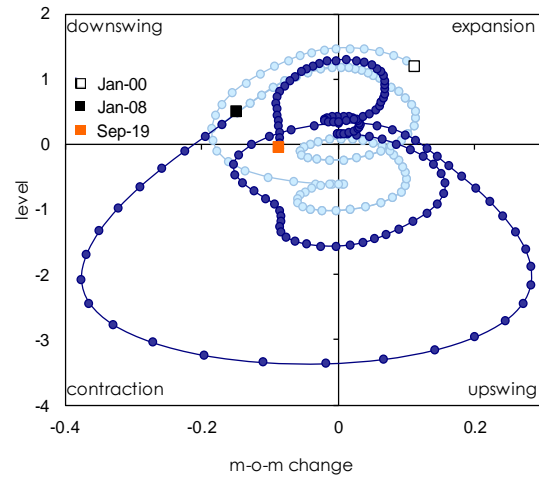
² For more information on the quantitative inflation perceptions and expectations, see the special topic in the previous [BCI 2019Q1](#).

Graph 1.1.11: Financial Services Confidence indicator



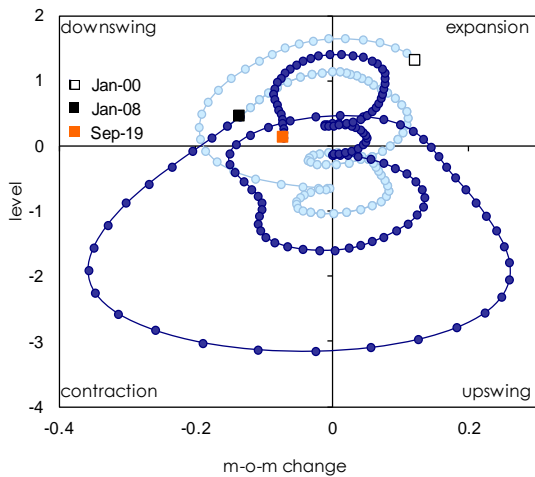
the downswing area, while the EA climate tracer for retail trade remained virtually unchanged in the downswing area. On a positive note, in the EA and the EU, the consumer climate tracer moved back to the expansion quadrant (from the downswing quadrant).

Graph 1.1.13: EU Climate Tracer



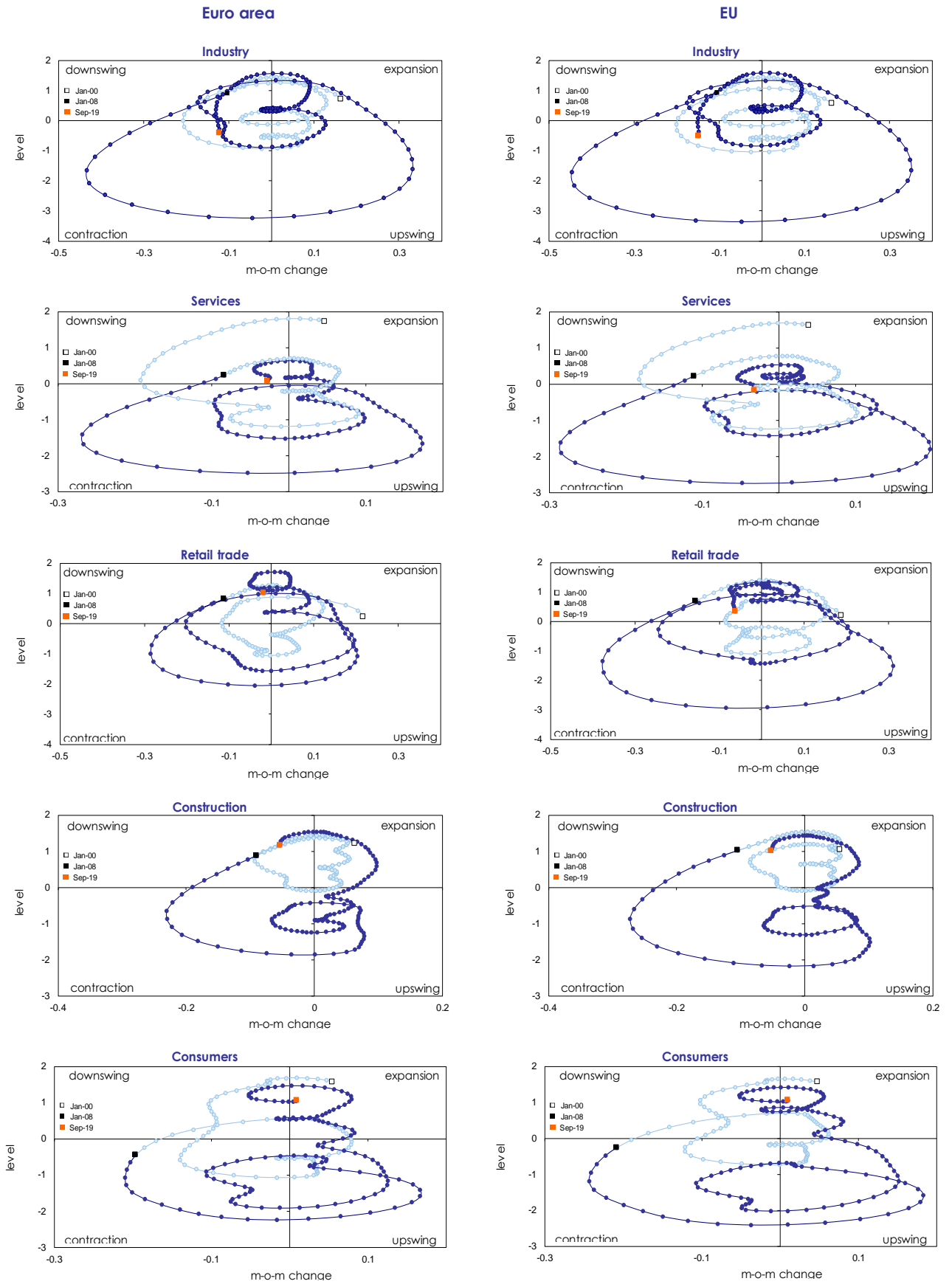
Reflecting the deterioration of overall sentiment in 2019-Q3, the EA **climate tracer** (see Annex for details) continued to move closer to the contraction quadrant (from the downswing quadrant), while the EU climate tracer already entered in the contraction area (see Graphs 1.1.12 and 1.1.13).

Graph 1.1.12: Euro area Climate Tracer



The sectoral climate tracers (see Graph 1.1.14) for industry moved plainly to the contraction quadrant in the EA and the EU. In services the EA climate tracer remained in the downswing quadrant, close to the frontier with contraction, while in the EU, it moved from the downswing quadrant to the contraction area. The EA and EU climate tracers for construction and the EU climate tracer for retail trade moved deeper into

Graph 1.1.14: Economic climate tracers across sectors

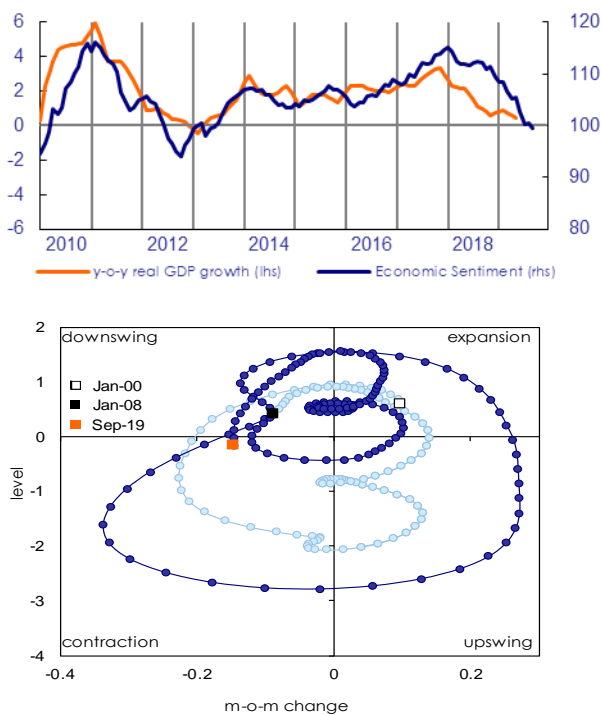


1.2. Selected Member States

Sharp sentiment losses were observed in 2019-Q3 in the UK (-7.1) and Germany (-3.2). Less strong declines were registered also in the Netherlands (-1.2) and Poland (-0.9), while the ESI remained broadly stable in France (-0.2), Italy (-0.3) and Spain (-0.6).

Sentiment in **Germany** deteriorated for the fourth quarter in a row (-3.2), and, at 99.4 points, the current level of the ESI has now fallen below the long-term average of 100 for the first time since 2013. Accordingly, in terms of the climate tracer (see Graph 1.2.1), the German economy entered in the contraction quadrant.

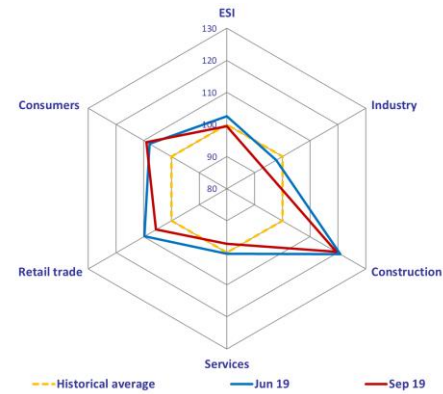
Graph 1.2.1: Economic Sentiment Indicator and Climate Tracer for Germany



From a sectoral perspective, confidence plummeted in industry, services and retail trade, while it eased more moderately in construction and remained broadly stable among consumers. By contrast to the confidence indicators for industry and services, which have fallen (markedly) below their long-term averages, the consumer, retail trade and construction confidence indicators are still at levels well in excess of their respective long-term averages

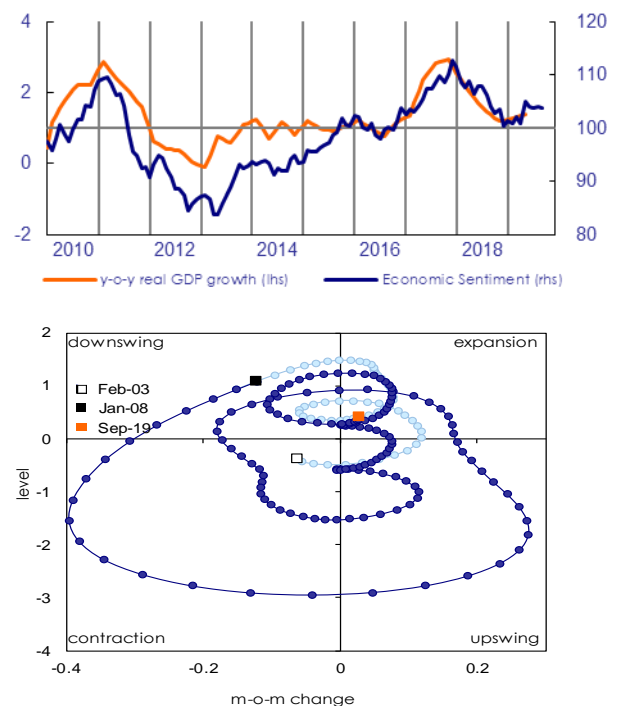
(see Graph 1.2.2). Construction confidence is still particularly high, despite the gradual cooling down since late 2018, following the sector's multi-annual recovery which had started in 2015.

Graph 1.2.2: Radar Chart for Germany



In **France** the ESI remained broadly stable (-0.2) at the high level reached at the end of 2019-Q2. At 103.9 points, the indicator remains well above its long-term average of 100.

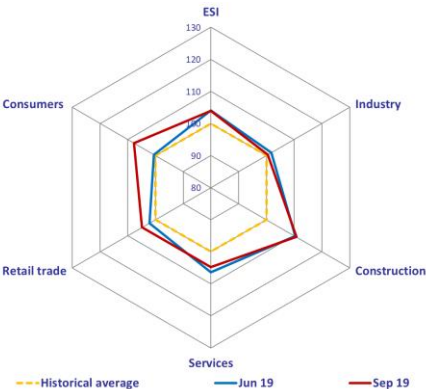
Graph 1.2.3: Economic Sentiment Indicator and Climate Tracer for France



Based on the latest sentiment data, the French climate tracer moved from the downswing to the expansion quadrant (see Graph 1.2.3).

A look at the French radar chart (see Graph 1.2.4) reveals that stable overall sentiment is resulting from improving confidence among consumers and retailers, which offset small decreases registered in industry and services. Confidence levels continued to largely exceed long-term averages in construction and, to a lesser extent, in services, retail trade and, more recently, among consumers.

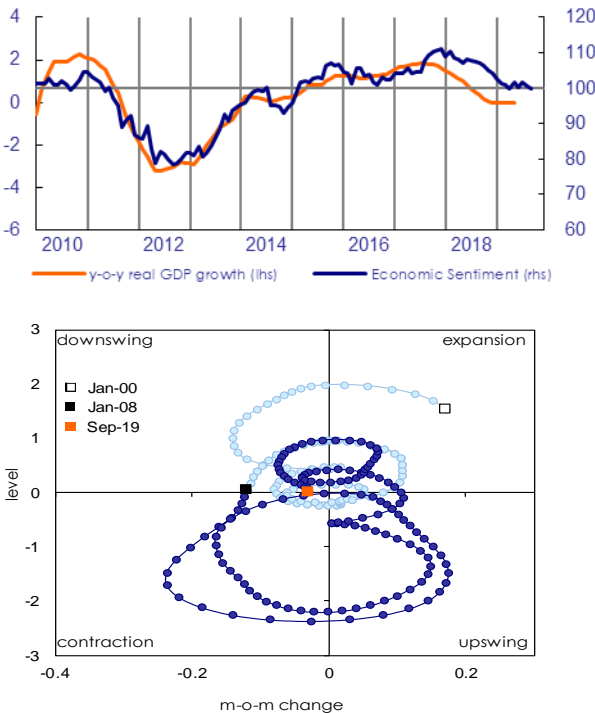
Graph 1.2.4: Radar Chart for France



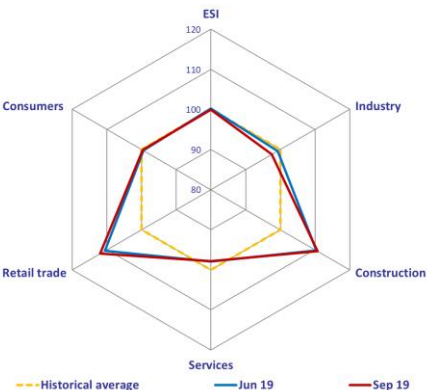
Sentiment in **Italy** remained broadly unchanged in the third quarter of 2019 (-0.3). At 99.9 points, the indicator has fallen below its long-term average of 100. In line with the sentiment indicator, the Italian climate tracer remained broadly stable, just at the intersection of the downswing quadrant and the contraction area (see Graph 1.2.5).

A look at the Italian radar chart (see Graph 1.2.6) shows virtually stable confidence in all sectors except for industry, where confidence worsened somewhat and retail trade, where it improved. Confidence levels are in line with the long-term average for consumers, while they are particularly high for retail trade and construction, and slightly below their long-term averages for industry and services.

Graph 1.2.5: Economic Sentiment Indicator and Climate Tracer for Italy

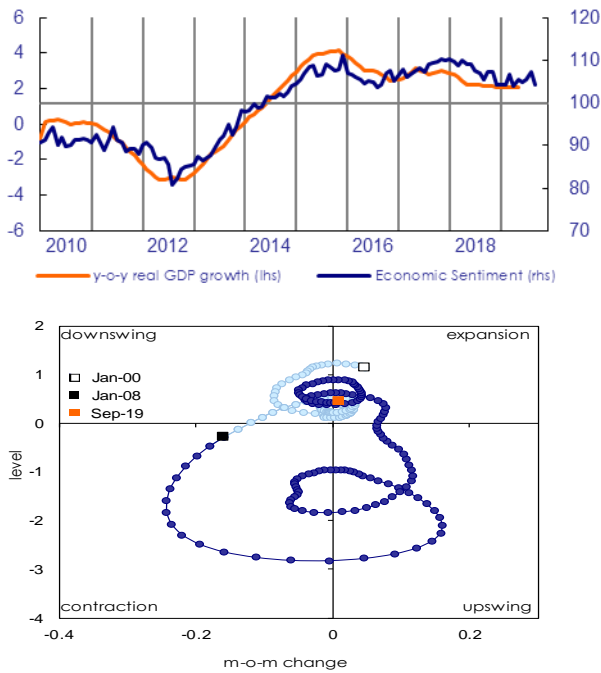


Graph 1.2.6: Radar Chart for Italy



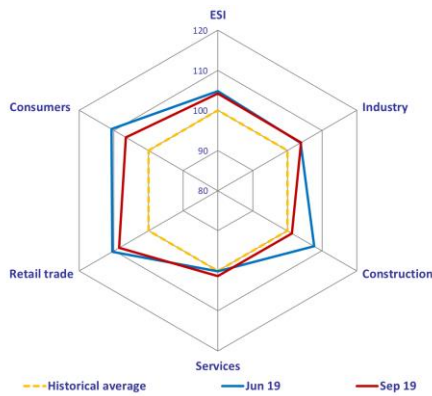
Also in **Spain**, sentiment remained broadly stable (-0.6) over the quarter. The current score (104.2) remains comfortably above the indicator’s long-term average of 100. In line with the recent stabilisation signals, the Spanish climate tracer remained at the intersection of the downswing quadrant with the expansion area (see Graph 1.2.7).

Graph 1.2.7: Economic Sentiment Indicator and Climate Tracer for Spain



As shown in the radar-chart (see Graph 1.2.8), stable confidence resulted from an increase in the economically important services sector that offset marked declines in construction and consumer confidence. Confidence in retail trade decreased as well (but only slightly), while the indicator for industry remained broadly unchanged. Confidence indicators fare above their long-term averages in industry, and are particularly high in retail trade and among consumers. In services and construction, confidence is only slightly above long-term average.

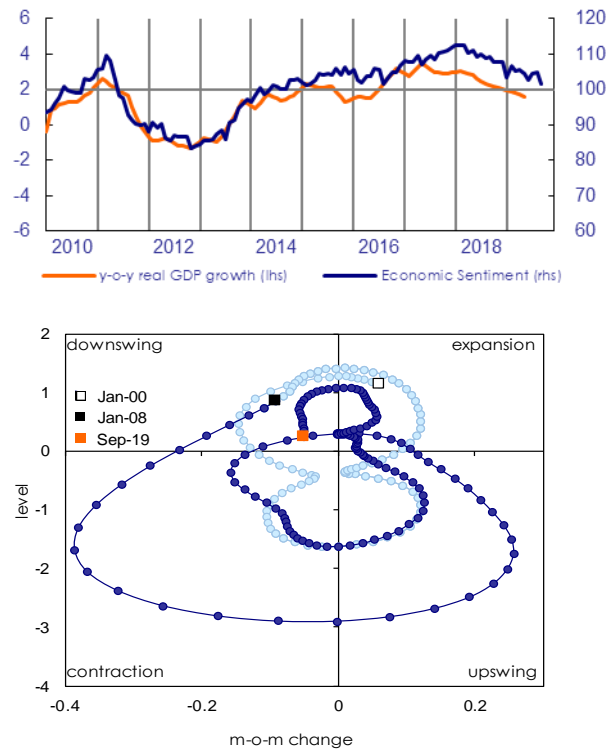
Graph 1.2.8: Radar Chart for Spain



Dutch sentiment continued the downward trend embarked upon at the beginning of 2018,

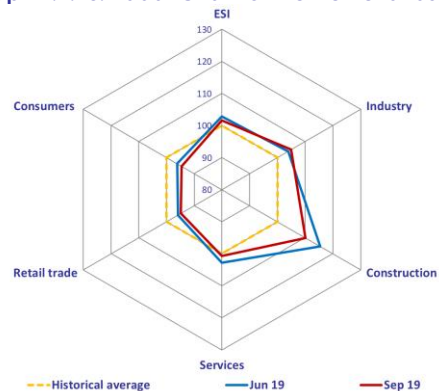
shedding 1.2 points on the quarter. At 101.6, the ESI remained above its long-term average of 100. The latest decline pushed the Dutch climate tracer deeper into the downswing quadrant (see Graph 1.2.9).

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



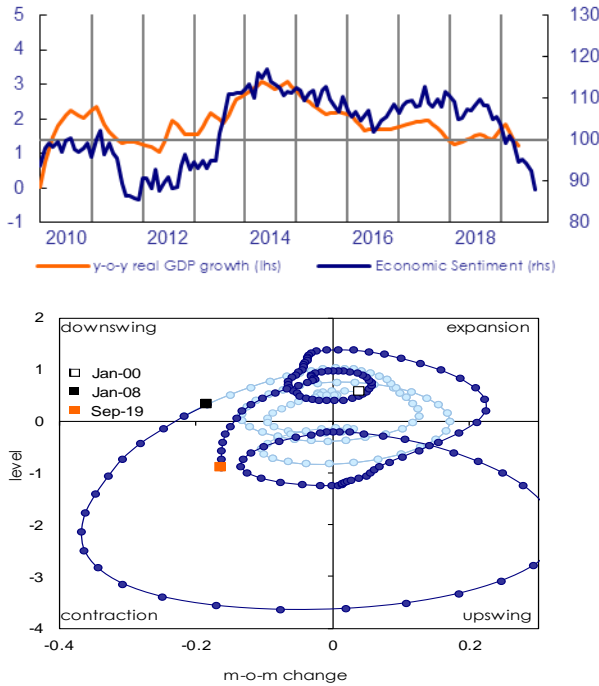
Sentiment deteriorated among consumers and in all business sectors, except for industry where it remained broadly stable. Compared to long-term averages, confidence is low among consumers and retail trade managers, while it stays just above its long-term average in services. By contrast, confidence is still high in industry and, particularly, construction (see Graph 1.2.10).

Graph 1.2.10: Radar Chart for the Netherlands



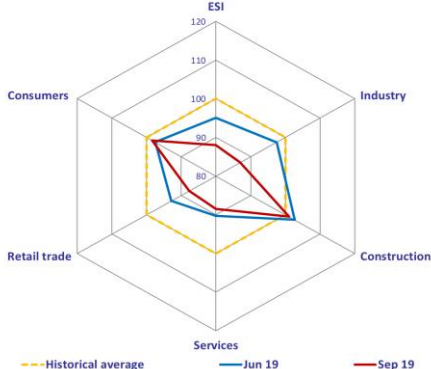
Sentiment in the **United Kingdom** worsened for the fourth consecutive quarter. Dropping by a significant 7.1 points (to 88.0), the country's ESI has now fallen markedly below its long-term average of 100. In terms of the climate tracer, faltering confidence has pushed the UK's position deeper into the contraction area of the tracer (see Graph 1.2.11).

Graph 1.2.11: Economic Sentiment Indicator and Climate Tracer for the United Kingdom



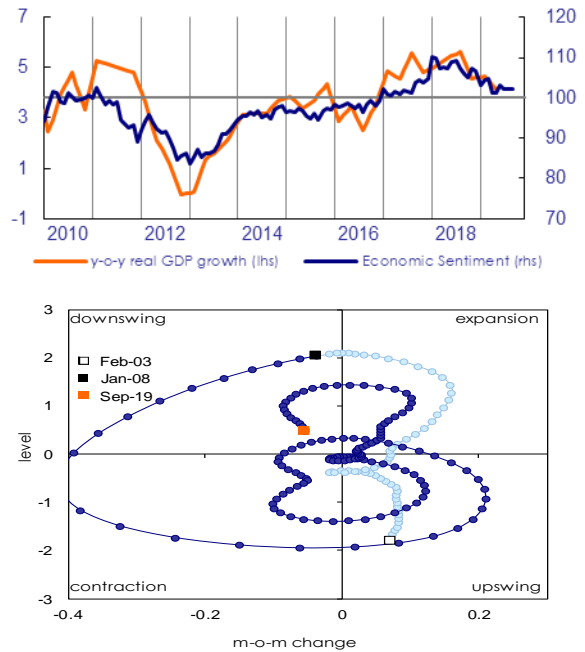
Focussing on sectoral developments (see Graph 1.2.12), confidence fell in all surveyed business sectors, while consumer confidence held up remarkably well, at close to its long-term average. The level of confidence in construction remained above its historical average, while confidence in industry, services and retail trade, has now fallen to well below long-term averages.

Graph 1.2.12: Radar Chart for the UK



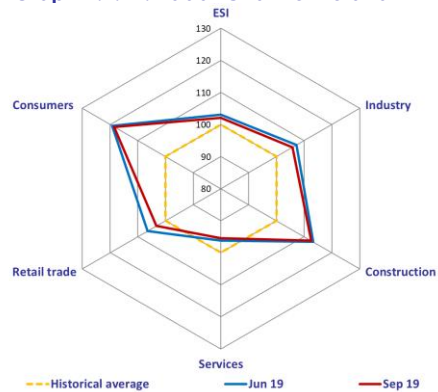
Sentiment in **Poland** decreased mildly, with the ESI losing 0.9 points on the quarter. At 102.1 points, the indicator nevertheless continues exceeding its long-term average of 100. Slipping confidence sent the Polish climate tracer deeper into the downswing quadrant (see Graph 1.2.13).

Graph 1.2.13: Economic Sentiment Indicator and Climate Tracer for Poland



As the Polish radar chart shows (see Graph 1.2.14), confidence weakened mostly in industry and retail trade, while sentiment in services, construction and among consumers stayed virtually flat. The level of confidence is generally markedly above long-term average, with the exception of the comparably moody services sector.

Graph 1.2.14: Radar Chart for Poland



2. SPECIAL TOPIC: ADDITIONAL RESULTS FROM QUARTERLY BUSINESS SURVEYS - FOCUS ON TRENDS IN MANUFACTURING

Introduction

As shown in the first part of this report, the confidence indicator in the manufacturing sector has been on a downward trend since the beginning of 2018 (see Graph 1.1.3 in Part 1), testifying to a protracted economic slowdown or, more recently, contraction in the sector. To complement the analysis presented in Part 1, this special topic looks into the results of additional questions that are asked on a quarterly basis to managers in the manufacturing industry.³ The main topics covered by these quarterly questions are: *factors limiting production, overall and export order developments, production capacity, capacity utilisation and competitive position on domestic/foreign markets.*

This special also examines if signals from the quarterly survey are consistent with the global trade tensions and significant policy uncertainty that have weighed on confidence in the manufacturing sector, which is the most exposed to international trade, and are projected to weaken the growth outlook for 2019 and beyond.

Factors limiting production

Managers in industry are asked to indicate the main factors that are currently limiting their production or business, if any. They are proposed the following categories: “none”, “insufficient demand”, “shortage of labour force”, “shortage of material and/or equipment”, “financial constraints”, and “other factors”. Multiple replies are allowed (unless managers choose “none”).

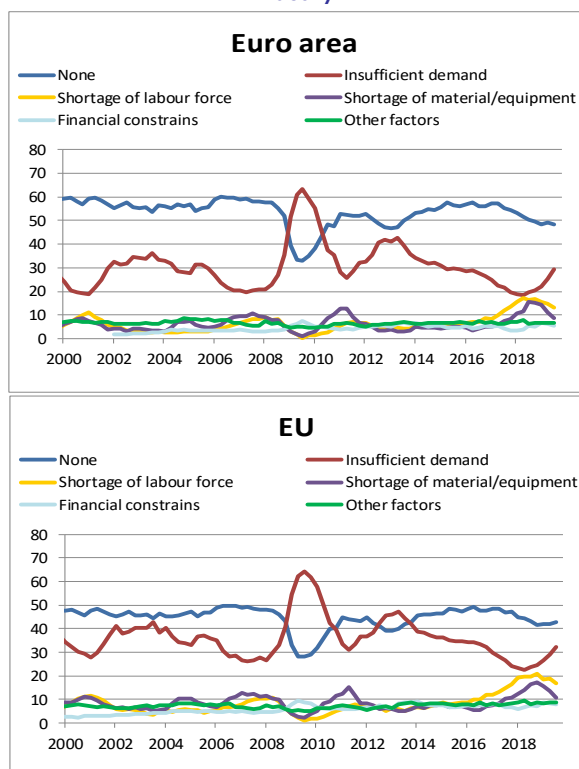
In the last quarterly survey (July 2019), in the euro area slightly less than half (48%) of the surveyed managers in industry reported that there were no factors limiting their production (Graph 2.1). The percentage of managers stating that no factors are limiting their production is decreasing since the second quarter of 2017. However, until mid-2018, this decrease was mainly explained by an upsurge of managers choosing “shortage of labour force” and “shortage of material/equipment” as factors limiting production, while, since then, the factor eroding shares of the “none” reply has been “insufficient demand”.

In July 2019, close to 30% of managers indicated that insufficient demand was limiting their production. The percentage of managers stating “shortage of labour force” and “shortage of material/equipment” as factors limiting their production has been decreasing since mid-2018, when around one out of six managers reported each of them as a limitation. Currently these supply factors pose restrictions for, respectively, 13% and 9% of the respondents, which is still a high level compared to the respective long-term averages. The other factors – “financial constraints” and “other factors” - are far less important and are stated by around only 5-7% of the respondents each.

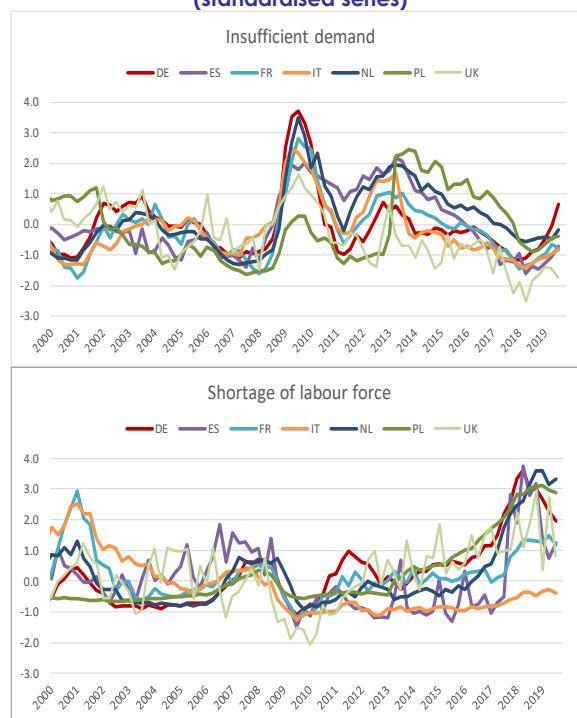
Developments in the EU are qualitatively similar, apart from a lower share of managers (43%) indicating no factors as limiting production. Accordingly, the share of managers stating either insufficient demand (32%) or supply factors (17% and 11%) as limiting their production is higher.

³ Four times a year - in January, April, July and October - extra questions are added to the monthly surveys of manufacturing industry, services and construction managers as well as consumers.

Graph 2.1: Factors limiting production in the manufacturing industry



Graph 2.2: Factors 'insufficient demand' and 'shortage of labour force' in the largest EU Member States (standardised series)



The upsurge since 2018 of the share of managers indicating insufficient demand as a factor limiting production is observable in five out of the seven largest EU Member States. Only in the Netherlands and the UK did the percentage remain broadly stable in the last year.

The rise has been particularly marked in Germany (Graph 2.2), in line with the industrial decline registered since the second quarter of 2018. As manufacturing constitutes more than 20% of Germany's value added, the industrial slump had a major impact on growth in the latest four quarters. In addition, through the international value-chains, this has an impact on other EU Member States. At the same time, the 'shortage of labour force' factor, whose importance doubled between early 2017 and mid-2018, decreased markedly thereafter. This decline does not bode well for the future development of the German labour market which currently still holds up well.⁴

Are these worsening developments visible also in other sectors?

A similar question, on factors limiting their business/building activity, is asked to managers in the services sector (on a quarterly basis) and in the construction sector (on a monthly basis⁵).

As shown in Graph 2.2, in both the euro area and the EU, the percentage of services managers stating that no factor is limiting their business is decreasing slightly since the beginning of 2018. However, this is mainly due to an increase of firms facing labour force shortages. The percentage of managers stating this factor had started to take off in mid-2016, accelerated in 2017 and then levelled off since early 2018. Contrary to the industry sector, scarcity of labour has not substantially decreased so far as a concern in the eyes of services managers. Nevertheless, 'insufficient demand' as a factor limiting activity has

⁴ See Leal J. et al. (2019), "The Weakness of the German Car Industry and its Sectoral and Global Impacts", Ifo Institute (EconPol_Policy_Brief)

⁵ For consistency of presentation, data have been converted (averaged) to quarterly frequency.

increased since spring 2019. This increase, plus the fact that the series on ‘insufficient demand’ in the manufacturing and services sectors are historically highly correlated, suggests that in the coming months, managers in the services sector could also increasingly see the demand for their services go down (see Table 2.1).

Graph 2.2: Factors limiting business in the services sector

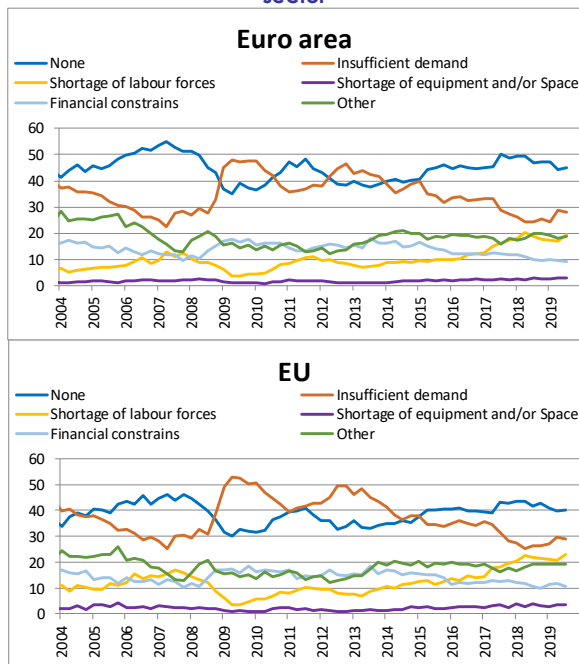
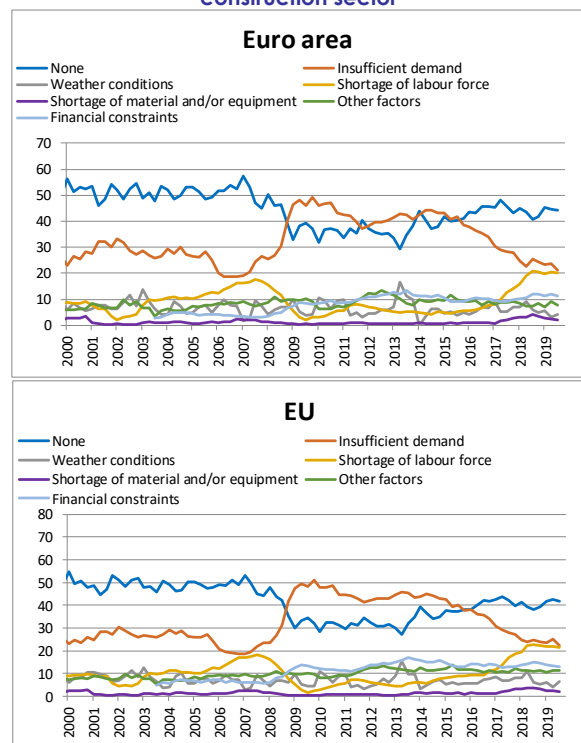


Table 2.1: Correlation between same factors in different surveys (over the period 2003Q2 – 2019Q3)

	None	Insufficient demand	Shortage of labour force	Shortage of material/equipment	Financial constraints	Other factors
correlation between industry and services	0.69	0.89	0.97	0.66	0.22	0.73
correlation between industry and construction	0.65	0.74	0.70	0.74	0.77	-0.24
correlation between services and construction	0.66	0.80	0.69	0.67	0.03	-0.45

Contrary to industry and services, demand as a factor limiting activity is still decreasing in the construction sector (see Graph 2.3), even though some signs of flattening out are visible since mid-2018. The good shape of the construction sector is also illustrated by the sustained record-high level reached by the factor ‘shortage of labour force’ throughout 2018-2019.

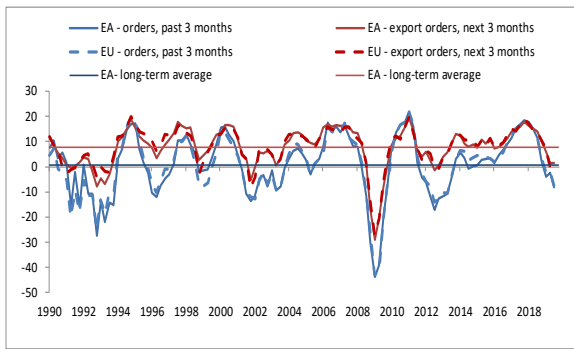
Graph 2.3: Factors limiting building activity in the construction sector



Overall and export order developments

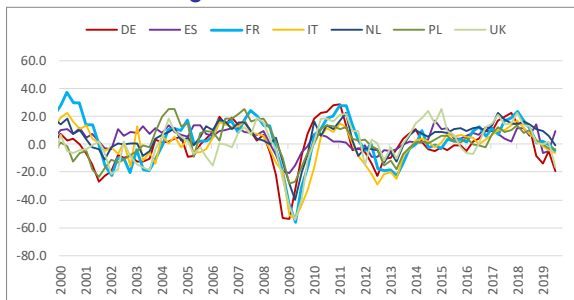
Consistent with an increase of the “insufficient demand” factor, managers in the industry sector have been reporting a worsening assessment of developments in ‘past order books’ and ‘expected export order books’ since mid-2018. In July 2019, in the euro area, both managers' assessment of past order books and their export order expectations were well below their respective long-term averages (Graph 2.4). Moreover, the order books assessment has turned into negative territory in early 2019. For export order expectations, the balance of managers expecting increases over those expecting decreases has come down to close to zero.

Graph 2.4: Overall and export order developments



As for ‘factors limiting production’, the deterioration of managers’ assessment of past order books was widespread across the largest EU Member States (Graph 2.5). The worsening was particularly pronounced among managers in Germany, where a combination of cyclical and structural issues have left their traces on the motor vehicle sector and, indirectly, on related manufacturing activities.

Graph 2.5: Overall order developments in the seven largest EU Member States



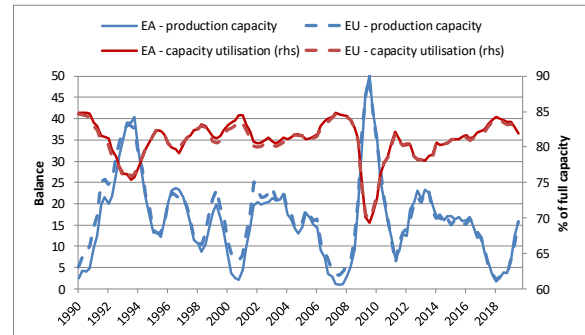
Production capacity and capacity utilisation

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.

Historically, the two series exhibit a high negative and coincident correlation (-0.94 for the euro area, and -0.92 for the EU). Graph 2.6 clearly depicts this pattern: the troughs observed in reported capacity utilisation rates are accompanied by peaks in the assessment of (unused) production capacity.

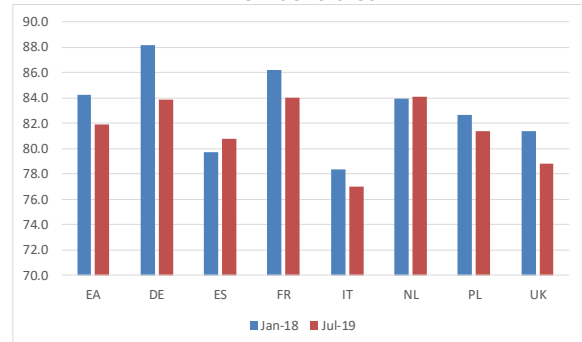
The latest available data signal that - in both the EU and the euro area – views of excessive production capacity have increased since the second quarter of 2018. Over the same period, quantitative capacity utilisation estimates have been on a downward trend and, at 81.6 (EU) and 81.9 (euro area), currently stand slightly above their long-term averages (roughly 81%).

Graph 2.6: Production capacity and capacity utilisation



Since early 2018, capacity utilisation decreased in five out of the seven largest Member States (Graph 2.7). The loss has been particularly marked in Germany (-4.3 percentage points over the period January 2018 –July 2019).

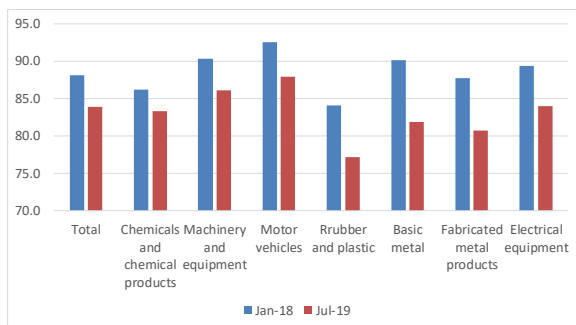
Graph 2.7: Capacity utilisation in the seven largest EU Member States



The loss of capacity utilisation in Germany was broad-based across the main exporting sectors (manufacture of motor vehicles, trailers and semi-trailers, manufacture of machinery and equipment, and manufacture of chemicals and chemical products). While the decrease was most marked in the motor vehicle sector, the full extent of the reduction in capacity utilisation become evident when looking at the manufacturing sectors that are important component suppliers to the car production: fabricated metal products, rubber and plastic,

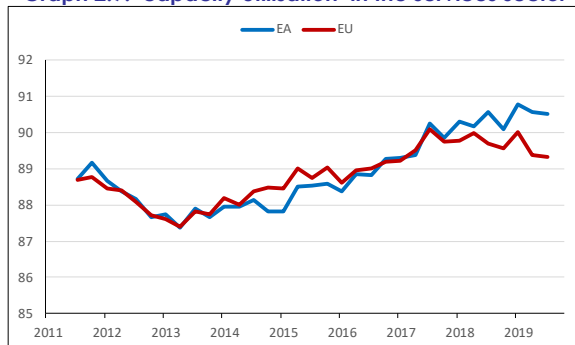
basic metals and electrical equipment (Graph 2.8).

Graph 2.8: Capacity utilisation in selected sectors in Germany



Turning to the services sector, a question inquiring the additional output that firms can generate with the currently available resources has been asked since the end of 2011. The “rate of capacity utilisation” can then easily be inferred.⁶ As shown in Graph 2.9, the series continues to be on an upward trend in the EA; in the EU, capacity utilisation reached a local peak in the third quarter of 2017, then moved sideward until the end of 2018 and has decreased slightly since spring 2019.

Graph 2.9: 'capacity utilisation' in the services sector

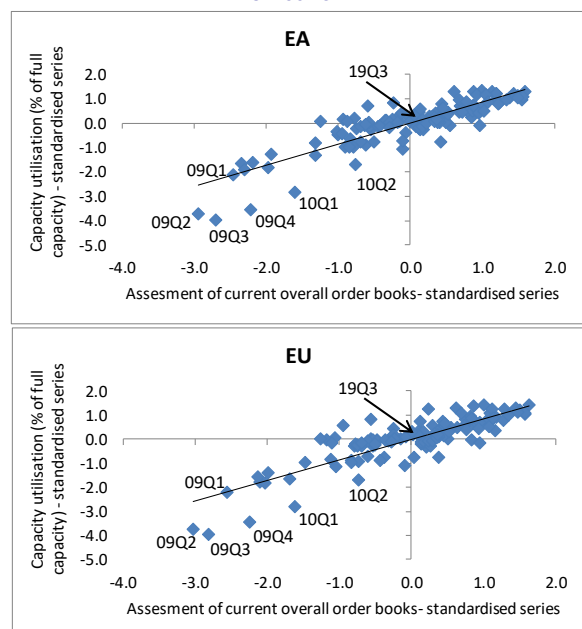


Is capacity utilisation consistent with managers' monthly assessment of the level of order books?

Looking at the historical relationship between capacity utilisation and the monthly question on the assessment of the current overall order books (Graph 2.10), it appears that - for both the euro area and the EU - managers' estimates of capacity utilisation are generally consistent with their assessments of order books. Only during the post-crisis period from mid-2009 to mid-2010 were capacity utilisation estimates more subdued than what assessments of current 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.

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

Graph 2.10: Assessment of order books* and capacity utilisation



* For consistency of presentation, monthly data on order assessments were transformed to quarterly averages.

⁶ The exact formulation of the question is: “If the demand addressed to your firm expanded, could you increase your volume of activity with your present resources? Yes – No. If so, by how much? ...%” The capacity utilisation rate (CU) can then easily be inferred with the formula: $CU \text{ (in \%)} = 100 / (1 + \text{percentage of increase} / 100)$.

Competitive position on the market

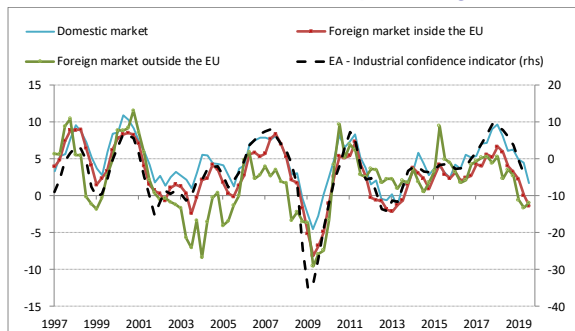
Finally, manufacturing managers are asked how their competitive position on domestic and foreign markets (inside and outside the EU) has developed over the past 3 months. The possible responses are 'improved', 'remained unchanged' or 'deteriorated'.

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 complete picture of competitiveness developments that can complement the standard measures of international cost competitiveness.

At euro-area level, managers reported that their competitive position on domestic and foreign markets inside and outside the EU has deteriorated since early 2018 (Graph 2.11). On the external markets, euro-area manufacturers had to face a nominal effective appreciation of the euro since the beginning of 2017 and its negative impact on their price/cost competitiveness.

Graph 2.11: : Perceived competitive position and industry confidence indicator; euro-area; percentage balance



Interestingly, the series on perceived changes in competitive positions largely follow the

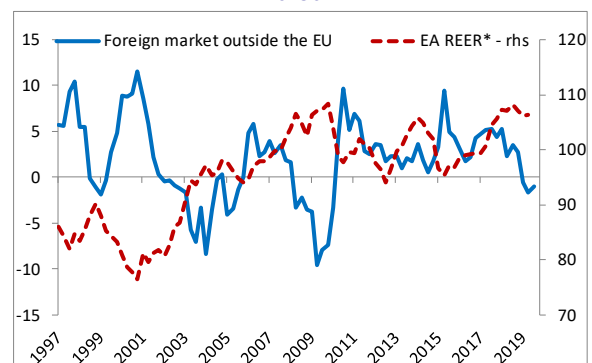
developments of the industrial confidence indicator, which itself is highly correlated with industrial output growth. This suggests that managers do not fully recognize if a perceived or expected loss in sales comes from a general market contraction or from a firm-specific decrease of market shares, 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 (Table 2.2) points to some complementary information related to developments outside the EU.

Table 2.2: Correlation between confidence indicator in industry and question on competitive position (over the period 1997Q1 – 2019Q3).

	Competitive position over the past 3 month on:		
	domestic market	foreign markets inside the EU	foreign markets outside the EU
EA - COF	0.88	0.87	0.66
EU - COF	0.85	0.71	0.50

The trend in the perceived competitive position outside the EU is indeed inversely 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 2.12). With few exceptions, there is a relatively strong (negative) co-movement between the two series.

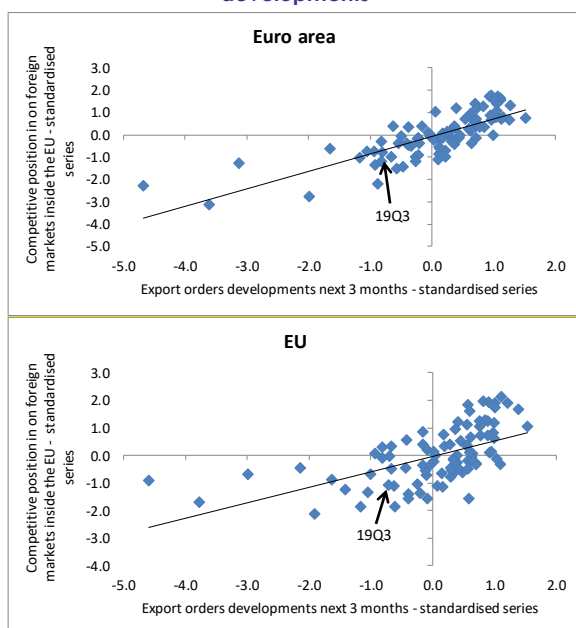
Graph 2.12: : Perceived competitive position outside the EU, and the relative costs index of competitiveness; euro-area



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

As mentioned before, a one-to-one correspondence is not to be expected, given that the survey-based series of perceptions measures a much broader concept of competitiveness than the index of cost competitiveness.

Graph 2.13: Perceived competitive position on foreign markets inside the EU, and expected export order developments



The competitiveness position on foreign markets inside the EU, which represent around 64% of the export markets of EU firms, is also consistent with developments in managers' export order expectations (Graph 2.13). 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 0.88 in the euro area and 0.64 in the EU). Currently, the balance of opinions on the competitive position on foreign markets inside the EU is slightly lower than what expectations on export order books would suggest.

Conclusions

Quarterly results on industry managers' perceptions (of factors limiting their business, overall and export order developments, production capacity, capacity utilisation and the competitive position on domestic and foreign markets) complement the monthly survey results, by covering some areas not covered by the monthly survey, by offering a slightly more long-term, or 'structural' perspective and by smoothing out some unavoidable short-term volatility in the data.

Recent developments in the quarterly survey questions 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 worsened since early 2018. The quarterly assessments weakened in most of the largest EU Member States and the decline was particularly strong in Germany. Consistently, quantitative estimates of capacity utilisation rates have been on a downward trend. Finally, euro-area managers reported that their competitive position on foreign markets inside and outside the EU has been deteriorating since the beginning of 2018. Overall, the quarterly results reinforce the picture of a manufacturing-led downturn and a more robust situation in the construction and, to a lesser extent, services sectors.

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 (monthly) assessment of order books. Moreover, developments in managers' export order expectations are consistent with their assessment of their competitiveness position on foreign markets.

Finally, there is in general a rather strong link between the confidence indicator for industry and the perceived competitiveness on domestic markets and foreign markets inside the EU, while the competitive position on foreign markets outside the EU reacts to 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.

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	2018		2019		Average	2018		2019		Average	2018		2019		Average	2018		2019	
	2004-2019	Q4	Q1	Q2	Q3	2004-2019	Q4	Q1	Q2	Q3	2004-2019	Q4	Q1	Q2	Q3	2004-2019	Q4	Q1	Q2	Q3
EU	9.2	8.1	7.6	8.9	8.7	3.7	3.1	2.8	3.1	3.1	6.6	5.7	5.3	5.9	5.9	11.6	10.2	9.8	11.3	10.9
EA	8.8	6.6	6.3	7.5	7.2	3.7	2.6	2.5	2.7	2.6	6.3	4.6	4.4	4.9	4.7	11.0	8.0	7.8	9.2	8.8
Gender: Male																				
EU	7.9	7.1	6.7	7.7	7.6	3.3	2.8	2.6	2.8	2.9	5.7	5.0	4.7	5.1	5.3	9.9	8.5	8.1	9.5	9.6
EA	7.7	5.8	5.6	6.3	6.2	3.3	2.4	2.3	2.5	2.5	5.6	4.2	4.1	4.4	4.3	9.5	6.9	6.7	7.6	7.6
Gender: Female																				
EU	10.5	9.3	8.7	10.3	10.0	4.2	3.5	3.0	3.5	3.5	7.6	6.3	5.7	6.8	6.7	13.5	11.6	11.2	13.1	12.6
EA	10.0	7.6	7.3	8.9	8.3	4.1	3.0	2.8	3.1	2.8	7.2	5.1	4.7	5.7	5.3	12.7	9.3	9.0	11.2	10.5
Age: 16 to 29																				
EU	9.8	8.9	9.7	9.9	9.9	3.9	3.6	3.7	3.5	3.5	7.3	6.8	7.5	7.5	7.5	12.9	11.7	12.8	13.1	13.1
EA	9.3	6.1	7.7	7.4	7.4	3.9	2.6	2.9	2.8	2.8	7.0	4.8	5.9	5.4	5.4	12.1	7.6	9.5	10.1	10.1
Age: 30 to 49																				
EU	9.4	8.8	8.2	9.6	9.3	3.8	3.4	3.0	3.2	3.4	6.8	6.2	5.5	6.3	6.2	11.9	11.1	10.9	12.1	11.8
EA	9.0	6.8	6.6	7.9	7.3	3.7	2.7	2.7	2.8	2.7	6.5	4.7	4.5	5.2	4.7	11.4	8.0	8.6	9.7	8.9
Age: 50 to 64																				
EU	8.9	7.5	6.9	8.3	8.2	3.7	3.1	2.8	3.1	3.2	6.4	5.1	4.7	5.7	5.7	11.1	9.4	8.7	10.6	10.2
EA	8.6	6.7	6.1	7.3	7.1	3.6	2.7	2.6	2.7	2.7	6.2	4.6	4.3	5.0	4.9	10.7	8.3	7.6	9.3	9.0
Age: 65+																				
EU	8.8	6.8	6.3	7.1	7.3	3.8	3.1	2.8	3.0	2.9	6.4	5.0	4.5	5.0	5.2	10.9	8.3	7.5	8.7	9.1
EA	8.4	6.2	5.7	6.3	6.5	3.7	2.7	2.5	2.6	2.5	6.1	4.4	4.0	4.5	4.6	10.3	7.5	6.8	7.7	8.3
Income: 1st quartile																				
EU	11.5	10.2	10.3	11.2	11.4	4.5	3.7	3.6	4.1	3.6	8.3	7.0	7.1	7.7	7.7	15.0	13.3	13.6	14.7	14.6
EA	11.0	8.9	8.9	10.0	9.7	4.4	3.1	3.3	3.6	2.9	7.8	5.9	6.1	6.9	6.4	14.2	11.2	11.8	13.1	12.3
Income: 2nd quartile																				
EU	9.6	8.5	8.0	9.8	9.3	4.0	3.4	2.8	3.7	3.7	7.0	5.8	5.5	6.5	6.3	12.3	10.5	10.2	12.2	11.2
EA	9.2	7.1	6.7	8.4	8.1	3.9	2.9	2.8	3.1	3.2	6.7	5.0	4.6	5.5	5.5	11.7	8.5	8.3	10.5	9.5
Income: 3rd quartile																				
EU	8.6	7.6	7.3	8.5	8.3	3.6	3.1	2.9	3.1	3.4	6.3	5.6	5.3	5.8	6.0	10.9	9.7	9.4	10.2	10.6
EA	8.3	6.1	5.8	7.1	6.7	3.6	2.6	2.5	2.6	2.8	6.0	4.5	4.3	4.9	4.6	10.4	7.5	7.2	8.3	8.6
Income: 4th quartile																				
EU	7.3	6.8	6.0	7.1	7.0	3.1	2.7	2.6	2.8	2.8	5.4	4.7	4.4	4.9	4.8	9.2	8.4	7.7	9.3	8.9
EA	6.9	5.0	4.7	5.4	5.2	3.0	2.2	2.1	2.2	2.2	5.1	3.7	3.5	3.9	3.7	8.6	6.2	5.9	6.9	6.5
Education: Primary																				
EU	11.0	11.3	10.2	12.6	11.6	4.3	4.2	3.7	4.3	4.1	7.9	7.7	7.6	9.1	7.9	14.5	15.9	13.5	17.1	15.3
EA	10.0	8.4	7.5	9.4	9.0	4.1	3.1	3.0	2.9	3.2	7.1	5.4	4.9	5.8	5.8	12.7	10.9	9.3	11.7	11.6
Education: Secondary																				
EU	9.3	8.4	8.1	9.4	9.2	3.8	3.1	2.8	3.3	3.2	6.8	5.8	5.5	6.3	6.5	11.9	10.4	10.7	11.8	11.3
EA	8.8	7.2	7.0	8.0	7.8	3.6	2.8	2.7	2.9	2.8	6.3	4.9	4.6	5.4	5.4	11.1	8.7	9.1	10.1	9.5
Education: Further																				
EU	7.5	7.0	6.6	7.4	7.5	3.2	2.9	2.7	2.8	3.0	5.5	5.0	4.7	5.2	5.2	9.6	9.2	8.6	9.6	9.5
EA	7.0	5.3	5.1	5.9	5.7	3.0	2.3	2.3	2.4	2.3	5.2	3.8	3.7	4.1	3.9	8.9	6.7	6.6	7.2	7.1

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

	weighted mean adjusted for outliers					25% quartile					median					75% quartile				
	Average	2018		2019		Average	2018		2019		Average	2018		2019		Average	2018		2019	
	2004-2019	Q4	Q1	Q2	Q3	2004-2019	Q4	Q1	Q2	Q3	2004-2019	Q4	Q1	Q2	Q3	2004-2019	Q4	Q1	Q2	Q3
EU	6.6	7.2	6.8	7.8	8.0	2.4	2.4	2.2	2.4	2.5	4.4	4.8	4.4	5.0	4.9	8.1	9.0	8.4	9.9	10.3
EA	5.7	5.1	4.7	5.8	5.6	2.0	1.8	1.6	1.8	1.7	3.8	3.2	2.9	3.5	3.2	6.9	5.9	5.3	6.8	6.8
Gender: Male																				
EU	5.8	6.4	6.1	6.9	7.0	2.2	2.2	2.1	2.2	2.3	3.9	4.1	3.8	4.1	4.1	7.0	7.6	6.9	8.0	8.2
EA	5.1	4.5	4.2	5.1	5.0	1.9	1.7	1.5	1.6	1.6	3.4	3.0	2.7	3.1	2.9	6.1	5.3	4.8	5.6	5.8
Gender: Female																				
EU	7.5	8.2	7.7	9.0	9.2	2.7	2.8	2.5	2.8	2.9	5.1	5.4	5.3	5.9	6.0	9.5	10.4	9.7	11.6	12.2
EA	6.4	5.8	5.2	6.7	6.4	2.2	2.0	1.8	2.0	1.8	4.3	3.6	3.4	4.2	4.1	8.0	6.8	6.2	8.2	8.3
Age: 16 to 29																				
EU	7.2	8.0	8.4	9.9	9.9	2.5	3.1	3.0	3.5	3.5	5.0	6.1	6.4	7.2	7.2	9.4	10.9	11.6	12.8	12.8
EA	6.0	4.4	5.0	6.3	6.3	2.1	1.6	1.7	1.9	1.9	4.2	3.0	3.8	4.5	4.5	7.8	5.4	6.4	7.9	7.9
Age: 30 to 49																				
EU	6.7	8.0	7.6	8.7	8.6	2.4	2.7	2.5	2.6	2.6	4.6	5.3	5.1	5.8	5.4	8.5	10.1	9.9	11.6	11.5
EA	5.9	5.2	5.0	6.2	5.8	2.0	1.9	1.6	1.9	1.6	3.9	3.3	3.2	4.0	3.4	7.3	6.4	5.9	7.6	7.3
Age: 50 to 64																				
EU	6.4	6.6	6.1	7.1	7.4	2.4	2.4	2.1	2.4	2.5	4.4	4.3	3.9	4.3	4.7	7.9	7.7	7.2	8.6	8.5
EA	5.6	5.2	4.5	5.6	5.7	2.1	1.8	1.7	1.8	1.9	3.8	3.1	2.8	3.3	3.5	6.8	6.0	5.3	6.6	6.4
Age: 65+																				
EU	6.1	5.9	5.3	5.9	6.2	2.5	2.4	2.2	2.4	2.4	4.3	4.1	3.6	4.1	4.0	7.5	7.2	6.4	7.1	7.3
EA	5.2	4.8	4.2	4.8	4.8	2.1	1.9	1.7	1.8	1.7	3.6	3.3	2.8	3.2	2.9	6.4	5.6	5.0	5.6	5.8
Income: 1st quartile																				
EU	8.2	8.7	8.7	9.8	10.2	2.8	2.8	2.7	3.2	3.1	5.6	5.7	5.5	6.4	6.6	10.6	11.0	11.6	13.2	13.4
EA	7.0	6.5	6.1	7.5	7.7	2.4	2.1	1.8	2.3	2.1	4.7	4.0	3.7	4.6	4.6	8.9	8.0	8.0	10.0	10.0
Income: 2nd quartile																				
EU	6.9	7.6	7.4	8.5	8.3	2.6	2.5	2.4	2.8	2.9	4.8	5.0	4.7	5.5	5.5	8.8	9.5	9.3	11.4	10.5
EA	6.0	5.4	5.0	6.3	6.4	2.2	1.9	1.7	1.8	2.1	4.1	3.4	3.2	4.0	4.0	7.5	6.4	6.0	8.0	8.2
Income: 3rd quartile																				
EU	6.2	6.8	6.6	7.5	7.7	2.4	2.5	2.2	2.5	2.6	4.3	4.7	4.2	4.7	4.8	7.8	8.5	8.5	9.5	9.6
EA	5.4	4.8	4.4	5.6	5.4	2.0	1.8	1.7	1.8	1.8	3.7	3.2	3.0	3.5	3.3	6.7	5.7	5.2	6.7	6.8
Income: 4th quartile																				
EU	5.3	6.4	5.5	6.4	6.7	2.1	2.3	2.1	2.3	2.3	3.7	4.2	3.8	4.0	4.0	6.7	7.8	7.0	7.6	8.3
EA	4.6	4.1	3.5	4.4	4.2	1.8	1.7	1.5	1.7	1.6	3.2	2.8	2.5	2.9	2.6	5.6	5.0	4.3	5.1	5.0
Education: Primary																				
EU	8.0	9.5	8.7	11.1	10.5	2.8	2.9	2.8	3.5	3.5	5.5	6.8	5.9	7.6	7.4	10.4	13.3	11.1	15.9	13.9
EA	6.3	6.2	4.9	7.2	7.2	2.2	2.0	1.6	2.0	2.5	4.3	4.0	3.1	4.2	4.3	7.9	7.6	5.7	9.5	9.3
Education: Secondary																				
EU	6.8	7.3	7.1	8.1	8.2	2.4	2.5	2.2	2.7	2.7	4.6	5.0	4.6	5.3	5.0	8.5	9.1	8.8	10.4	10.4
EA	5.8	5.5	5.2	6.3	6.1	2.1	2.0	1.7	2.0	1.8	3.9	3.4	3.2	4.0	3.6	7.1	6.5	6.3	7.6	7.1
Education: Further																				
EU	5.6	6.6	6.3	6.9	7.2	2.2	2.4	2.2	2.3	2.5	3.9	4.3	4.2	4.3	4.7	7.0	8.6	7.5	8.4	9.1
EA	4.8	4.4	4.1	4.8	4.5	1.9	1.8	1.6	1.6	1.7	3.3	2.9	2.7	3.0	2.9	5.9	5.2	4.7	5.5	5.5

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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