European Commission

ISSN 2443-8049 (online)

European Business Cycle Indicators

4th Quarter 2020

TECHNICAL PAPER 045 | JANUARY 2021

EUROPEAN ECONOMY

Economic and Financial Affairs

European Economy Technical Papers are reports and data compiled by the staff of the European Commission's Directorate-General for Economic and Financial Affairs.

Authorised for publication by Reinhard Felke, Director for Policy, Strategy and Communication.

The Report is released every quarter of the year.

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https://ec.europa.eu/info/publications/economic-and-financial-affairs-publications_en.

Luxembourg: Publications Office of the European Union, 2021

PDF ISBN 978-92-76-28507-6 ISSN 2443-8049 doi:10.2765/251363 KC-BF-21-001-EN-N

European Commission
Directorate-General for Economic and Financial Affairs

European Business Cycle Indicators

4th Quarter 2020

Special topic

- Results of the autumn 2020 EU investment survey in the manufacturing sector.

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

Contact: Christian.Gayer@ec.europa.eu.

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- The Economic Sentiment Indicators (ESI) for the euro area (EA) and the EU moved broadly sideways over the fourth quarter, settling 0.5 points lower in December compared to September in both regions. At 94.4 (EA) and 89.5 (EU), the ESI is still well below its pre-pandemic level of February 2020 and its long-term average of 100.
- The Employment Expectations Indicator (EEI) worsened somewhat more markedly over the fourth quarter of 2020. In December, the indicator was 3.3 points (EA) and 2.1 points (EU) lower than in September. At 88.3 in the EA and 89.5 in the EU, the EEI remains significantly below its long-term average of 100.
- The slight decline in economic sentiment over the fourth quarter resulted from marked decreases in the services and retail trade sectors which more than offset substantial improvements in industry and, to a lesser extent, construction. Confidence among consumers remained broadly unchanged compared to September.
- Consumers' savings expectations rose further over the fourth quarter, hitting a historical high in December.
- At country level, the ESI continued to recover in two of the six largest EU economies, the Netherlands (+1.3) and Spain (+1.1). By contrast, the indicator decreased markedly in France (−5.7) and, to a lesser extent, in Poland (−1.3) and Germany (−1.2). In Italy (−0.7), sentiment remained broadly stable.
- Capacity utilisation in manufacturing recovered further (+4.2 percentage points in the EA, +4.1 in the EU). Still, at 76.3% (EA) and 76.5% (EU) in October, industrial capacity utilisation remained far below its long-term average of 80.6% (in both regions). Also capacity utilisation in services registered an increase (+0.7 percentage points in the EA and +0.5 in the EU). At 86.2% (EA) / 86.5% (EU), the rates remained below their respective long-term averages (as calculated from 2011 onwards) of 88.8% and 89.0%.

Special topic: RESULTS OF THE AUTUMN 2020 EU INVESTMENT SURVEY IN THE MANUFACTURING SECTOR

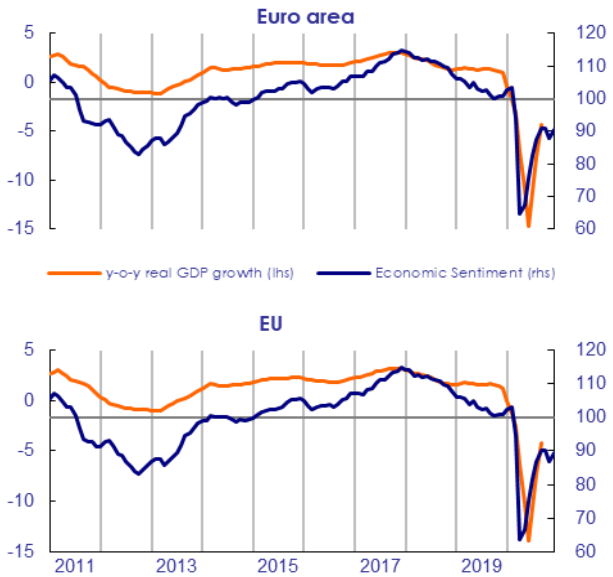
The results of the latest investment survey in the manufacturing sector, conducted in October/November 2020, provide an illustration of the detrimental impact of the COVID-19 pandemic on firms' investment activity. EA manufacturing firms' investment declined by 11.9% in 2020 and is planned to see only a partial recovery in 2021 (+3.2%). Compared to the Great Financial Crisis (GFC), the 2020 decline in investment appears moderate, which can be explained by the fact that economic activity, albeit initially slowing more than in 2009, saw a much faster recovery. Similarly, firms' investment plans for 2021 look more optimistic than in 2010, though still subdued. Considering that firms (still) consider their current production capacity as exceptionally high when compared to the level of orders and the expected change in demand over the coming months, their investment plans for 2021 seem to mainly express the hope that the pandemic will get under control in the course of the year, rather than concrete economic developments.

1. RECENT DEVELOPMENTS IN SURVEY INDICATORS

1.1. EU and euro area

In the fourth quarter of 2020, the economic sentiment indicators (ESI) for the euro area (EA) and the EU moved broadly sideways. The monthly profile was shaped by the renewed containment measures introduced in October / November to counter the second COVID-19-wave, followed by the announcement, at the end of November, of a vaccine. The latter had a positive impact on managers' and consumers' expectations in December. As a final result, the ESI ended 0.5 points lower than at the end of the third quarter in both regions. At 94.4 (EA) and 89.5 (EU), both indicators are still well below their pre-pandemic level of February 2020 and their long-term average of 100.

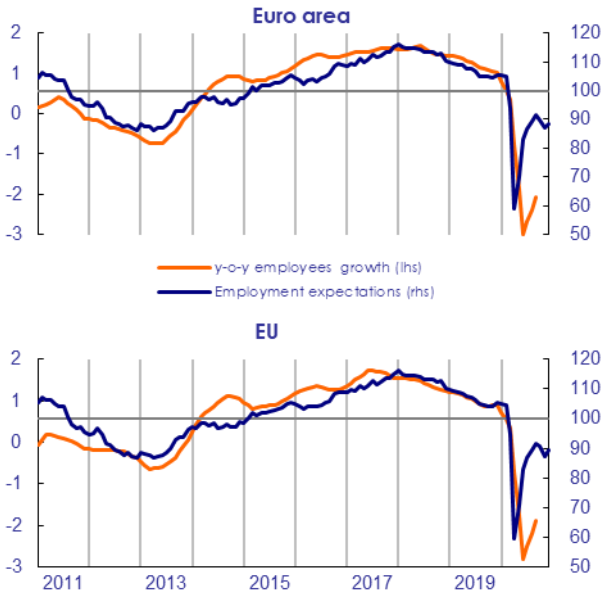
Graph 1.1.1: Economic Sentiment Indicator



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

The Employment Expectations Indicator (EEI)[1] worsened in October and November and recovered only partially in December. In December, the indicator was 3.3 points (EA) and 2.1 points (EU) lower than in September. At 88.3 in the EA and 89.5 in the EU, the EEI remains significantly below its February 2020 level (−16.7 points in the EA and −15.0 in the EU), and clearly below its long-term average of 100. Zooming into the EEI's sectoral components (see Graphs 1.1.5 and 1.1.7 below), employment plans in December were lower than in September in services and retail trade, while employment expectations in industry and construction are now at a higher level than in September.

Graph 1.1.2: Employment expectations indicator

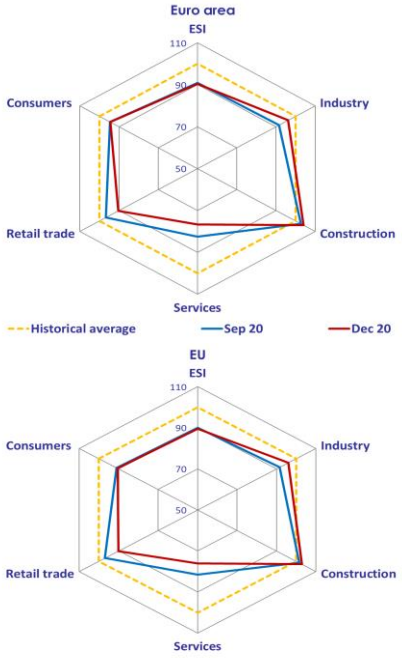


[1] The new indicator was presented in the 2019-Q4 special topic of the European Business Cycle Indicators publication (see also the Methodological User Guide to the Joint Harmonised EU Programme of Business and Consumer Surveys, p. 22, for a description of the EEI).

During the fourth quarter, developments in the ESI were broadly in line with developments in other survey-based bellwethers for the EA/EU. Markit Economics' PMI Composite Output Index decreased slightly in October and booked a strong drop in November. It then rebounded in December, reaching a level of 49.1, but remained lower than in September.

The Ifo Business Climate Index (for Germany) remained broadly unchanged in September and October and increased strongly in December. As a result, the index is now at a higher level than in September and even above its February 2020 level.

Graph 1.1.3: Radar Charts

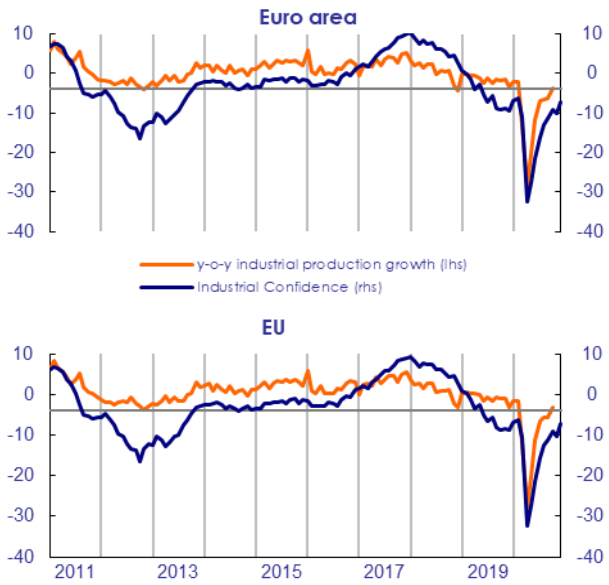


Note: A development away from the centre reflects an improvement of a given indicator. The ESI is computed with the following sector weights: industry 40%, services 30%, consumers 20%, construction 5%, retail trade 5%. Series are normalised to a mean of 100 and a standard deviation of 10. Historical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

Looking at the ESI's sectoral components (see Graph 1.1.3), during the fourth quarter, substantial improvements in industry and, to a lesser extent, construction were offset by marked decreases in the services and retail trade sectors. Confidence among consumers remained broadly unchanged compared to September. In industry, confidence recuperated around 95% of the losses of March and April 2020. Having registered the most important fall during the initial crisis period and another drop in the last quarter, confidence in the services sector recovered less than 50% of the losses registered from March to May. A further worsening recorded during the last quarter also explains why confidence in the retail trade sector is still well below its February level. All in all, the indicator offset less than 60% of the losses registered in March and April. Construction is the only sector where the confidence indicator stands above its long-term average. However, the indicator is still far below its pre-crisis level and recovered only around 40% of the losses incurred during the first-wave of the pandemic. Finally, confidence among consumers recovered some 50% of the combined losses of March and April.

At the country level, the ESI continued to recover in two of the six largest EU economies. In December compared to September, increases were registered in the Netherlands (+1.3) and Spain (+1.1). By contrast, the indicator decreased markedly in France (−5.7) and, to a lesser extent, in Poland (−1.3) and Germany (−1.2). In Italy (−0.7), confidence remained broadly stable. Generally, the path over the quarter was volatile. In November, when containment measures linked to the second wave of the pandemic were taken or expected, confidence fell in all the larger EU economies but the Netherlands. In December, thanks to the vaccine announcement, confidence picked up in all the larger countries but Germany, where the indicator remained broadly stable.

Graph 1.1.4: Industry Confidence indicator



Sector developments

Industry confidence continued to recover during the fourth quarter. In December, the indicator was 4.2 (EA) and 3.9 (EU) points higher than in September. In both areas, the indicator recovered in October and December, while it declined in November. All in all, industry confidence recovered some 95% of the losses attributable to the first wave of the pandemic. Having scored below their respective long-term average already before the crisis set in, both indicators are currently still below average (see Graph 1.1.4).

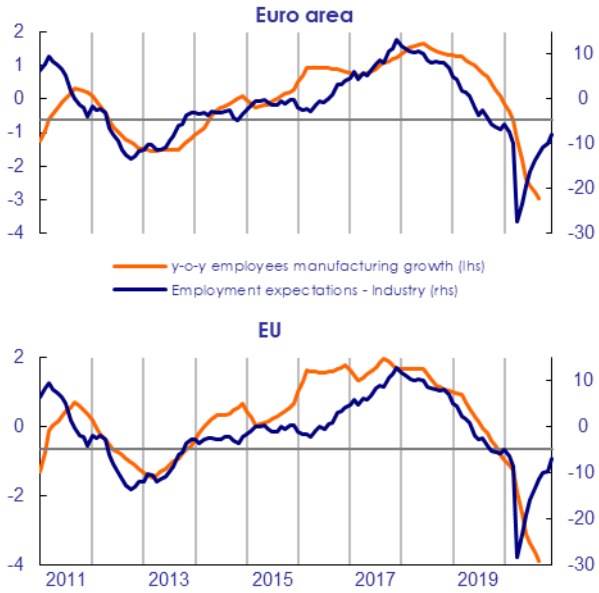
Zooming into the individual components of EA/EU industrial confidence, managers' **assessment of their order books** increased strikingly and continuously over the quarter. Though to a lesser extent, managers' **assessment of their stocks** as well improved over the quarter. By contrast, managers' **production expectations** decreased over the quarter. However, in December, following the announcement of a vaccine, the indicator picked up markedly.

Of the components not included in the confidence indicator, managers' views on **past production** increased over the quarter thanks to a substantial increase in October that was only partly offset by two consecutive decreases in November and December. Meanwhile, their appraisal of **export order books** increased continually over the quarter.

Managers' **employment expectations** (see Graph 1.1.5) continued to recover throughout the quarter. Managers' **selling price expectations** are now higher than in September, resulting from an increase in October, followed by a small decrease in November and a marked pickup in December.

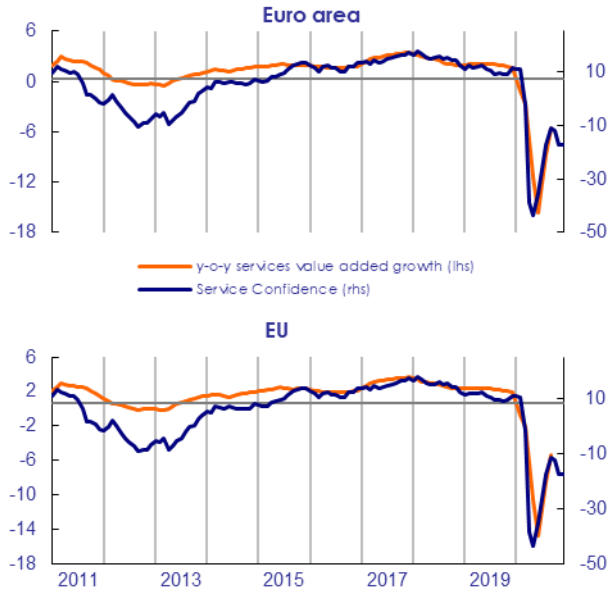
Among the six largest EU Member States, industry confidence recovered markedly in Germany (+6.5), Italy (+4.3) and the Netherlands (+3.4), while it decreased in France (−3.0) and remained broadly stable in Poland (+0.7) and Spain (+0.5). In all these countries, the indicator improved in December, while in most cases decreases were registered in November.

Graph 1.1.5: Employment expectations in Industry

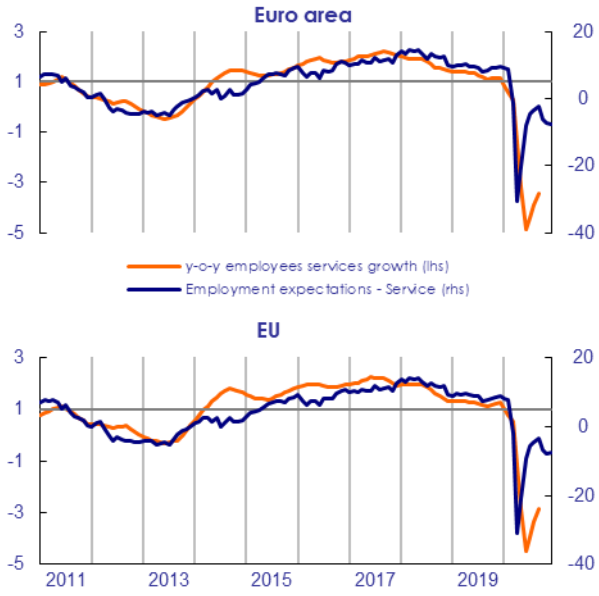


According to the quarterly manufacturing survey (carried out in October), **capacity utilisation in manufacturing** recovered around 65% of the losses recorded in April. Compared to the survey of July, the indicator increased in both the EA (+4.2 percentage points) and the EU (+4.1 percentage points). At 76.3% (EA) and 76.5% (EU) in October, both indicators remained well below their respective long-term averages of 80.6% in both areas.

Graph 1.1.6: Services Confidence indicator



Graph 1.1.7: Employment expectations in services



After recovering substantially during the third quarter, confidence in the **services** sector decreased noticeably during the fourth quarter. The indicator decreased by 6.2 points in the EA and by 5.9 points in the EU. In both the EA (−17.4) and the EU (−17.3), the level of services confidence is well below its respective long-term average (see Graph 1.1.6).

In the EA/EU services sector, managers revised their appraisals of **past demand** and the **past business situation** sharply down in November and December. By contrast, their **demand expectations** worsened markedly at the beginning of the quarter but recovered in December. In total, however, all the three components were at a much lower level in December than in September.

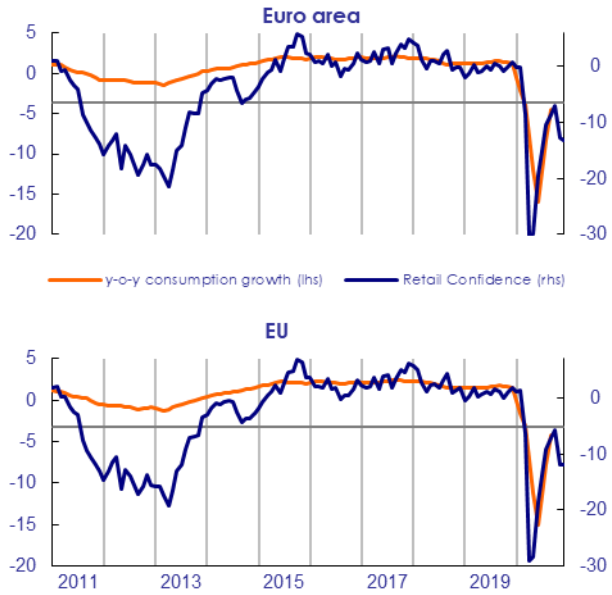
In both the EA and the EU, **employment expectations in services** worsened in the fourth quarter (see Graph 1.1.7). Managers' **selling price expectations** decreased in September and October and then increased in December. Overall, at the end of the year, the indicator was lower than in September.

Focussing on the six largest EU economies, the period from September to December saw large decreases in services confidence in Germany (−11.3), the Netherlands (−9.3), Italy (−9.2), France (−7.8) and Poland (−3.5). By contrast, the indicator rose substantially in Spain (+11.5).

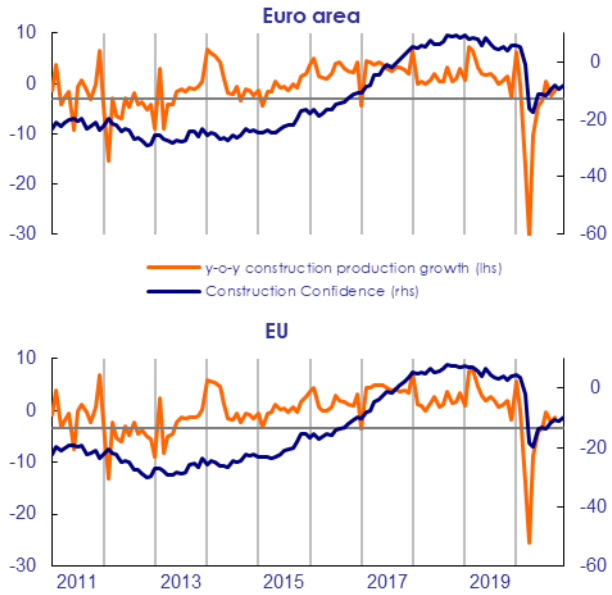
After having booked the by far strongest decline on record (since 2011) in April and a further marginal decrease in July, **capacity utilisation in services**, as measured by the quarterly survey conducted in October, increased by 0.7 percentage points in the EA and by 0.5 percentage points in the EU. At 86.2% (EA) / 86.5% (EU), the rates remain markedly below their respective long-term averages (as calculated from 2011 onwards) of 88.8% and 89.0%, respectively.

Retail trade confidence in the EA decreased strongly in 2020-Q4. In December, the indicator was 4.5 points (EA) and 4.7 points (EU) lower than in September. The worsening is mainly due to a strong decrease observed in November, which offset an improvement registered in October. In December, the indicator remained broadly unchanged in the EU and decreased marginally in the euro area. In both regions, confidence remains well below the long-term average (see Graph 1.1.8).

Graph 1.1.8: Retail Trade Confidence indicator



Graph 1.1.9: Construction Confidence indicator



Managers' assessment of the **past business situation** and the **level of stocks** worsened over the quarter. Retailers are also becoming more pessimistic concerning their expectations regarding the **future business situation**, which decreased strikingly in November but then picked up strongly in December.

For the six largest EU economies, retail confidence posted substantial decreases in Poland (−12.3), the Netherlands (−10.7), Italy (−10.2) and France (−6.5). By contrast, the indicator remained broadly stable in Germany (−0.5) and improved in Spain (+2.1).

In December compared to September, **construction confidence** increased somewhat in both the euro area (+1.6) and the EU (+1.8). In both regions, the indicator is now above the long-term average (see Graph 1.1.9). Nonetheless, the indicator is still far below its February level and recovered only around 40% of the dramatic drop registered from March to May.

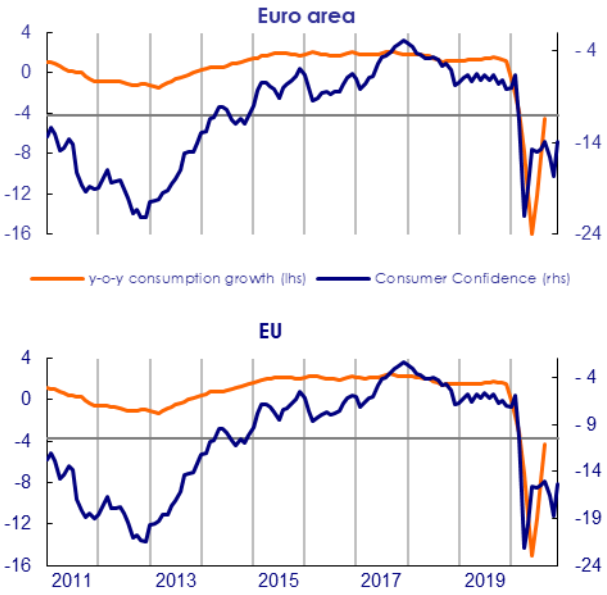
At the components level, in both regions, managers' views on **order books** and their **employment expectations** improved in December compared to September. Employment expectations, however, increased only in September and then remained broadly unchanged in November and December.

Among the six largest EU economies, construction confidence increased considerably in Spain (+11.3) and, to a lesser extent, in Italy (+2.2), the Netherlands (+1.6) and Poland (+1.3). By contrast, the indicator decreased in France (−1.7) and remained broadly unchanged in Germany (−0.3).

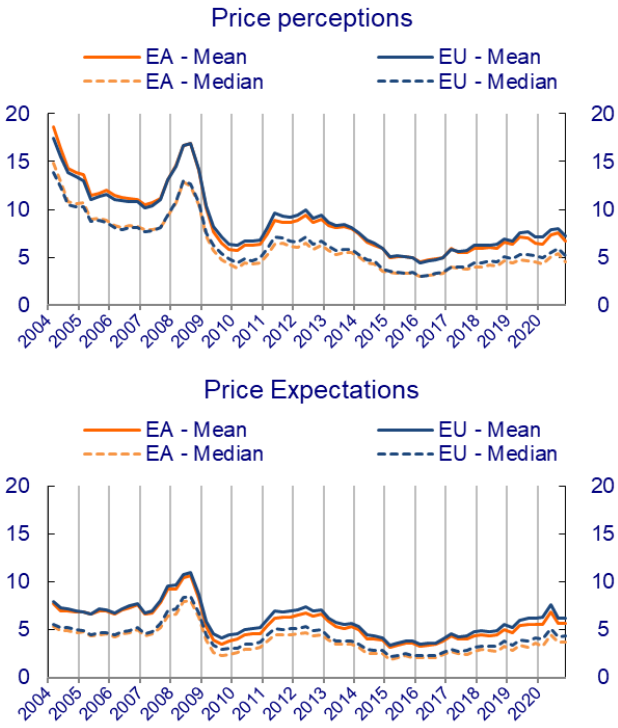
In December compared to September, the **consumer confidence** indicator was unchanged in the euro area and only marginally down in the EU (−0.3). In both areas, the indicator decreased strongly in October and November and picked up markedly in December. The indicator remained far below the long-term average (see Graph 1.1.10), recuperating around 55% (EA) and 40% (EU) of the reductions of March and April.

Looking at the individual components of the confidence indicator, consumers in both areas were more positive only about their assessment of the **past personal financial situation**. By contrast, their **expectations** about the **general economic situation** deteriorated. Both their views on their **future personal financial situation** and their intentions **to make major purchases** remained broadly stable. During the quarter, however, the development of the different components was rather volatile. In December compared to November, consumers were much more optimistic about their future personal financial situation and the general economic situation.

Graph 1.1.10: Consumer Confidence indicator



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



While not included in the Consumer confidence indicator, **consumers' savings expectations** rose further over the fourth quarter, continuing the surge experienced in the second quarter and hitting a historical high in December.

At the country level, consumer sentiment increased markedly in the Netherlands (+5.9) and Spain (+3.2), while it remained broadly stable in France (−0.3) and Poland (−0.2) and decreased somewhat in Germany (−2.2) and Italy (−1.4).

In the EA and the EU, both the mean and the median of **consumers' quantitative price perceptions** decreased in 2020-Q4 compared to 2020-Q3. Regarding consumers' **price expectations**, the mean in both regions and the median in the EU remained unchanged in 2020-Q4 compared to 2020-Q3, while the median in the EA decreased marginally (see Graph 1.1.11).[2]

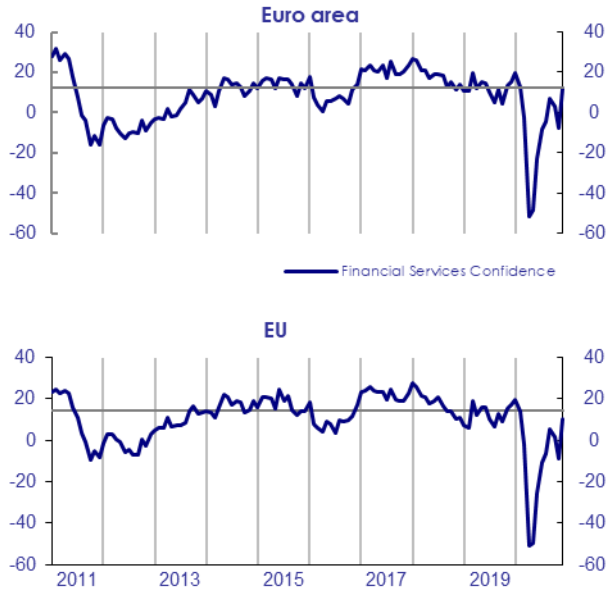
More detailed results, broken down by different socio-economic groups, are available in tables A.1.1 and A.1.2 of the Annex to section 1.

The **financial services confidence** indicator (not included in the ESI) strengthened by 5.2 (EA) / 4.8 (EU) points from September to December, as a result of a striking increase in December that offset two consecutive drops at the beginning of the quarter. The indicator recovered between 95% (EU) and 99% (EA) of the losses registered in March and April and stands now just below its long-term average (see Graph 1.1.12).

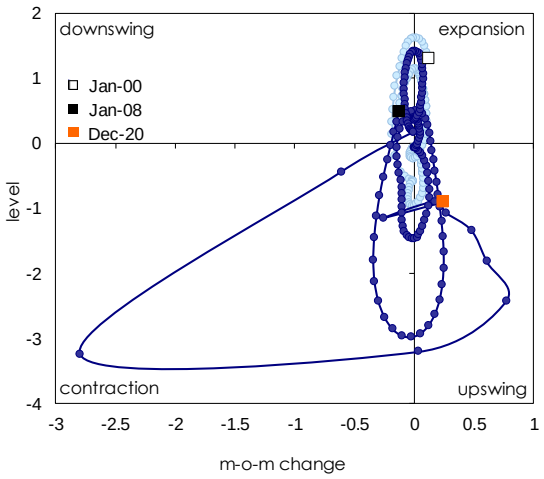
Taking a look at the individual components underlying the indicator, waxing confidence was driven mainly by striking increases in managers' assessments of **past demand** and, to a lesser degree, the **past business situation**. By contrast, their expectations for **future demand** decreased after some volatility during the quarter.

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

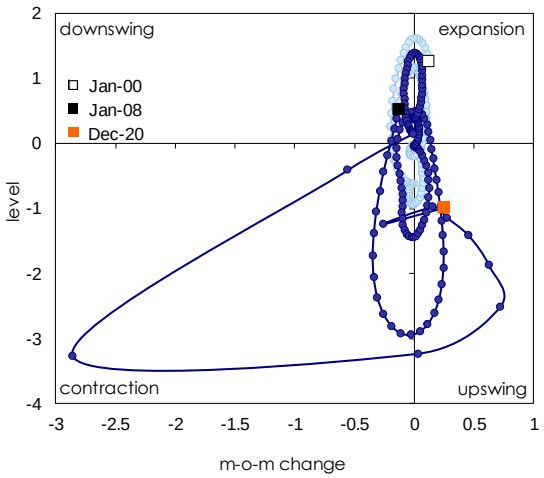
Graph 1.1.12: Financial Services Confidence indicator



Graph 1.1.13: Euro area Climate Tracer



Graph 1.1.14: EU Climate Tracer



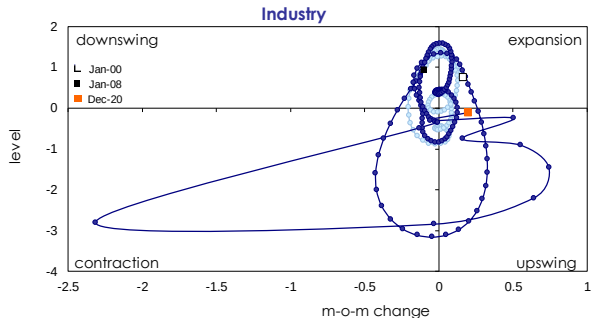
Reflecting the general volatility in perceptions and expectations over 2020-Q4, both the EA and the EU **climate tracers** (see Annex for details) temporarily entered the contraction quadrant and went back to the upswing quadrant at the end of the quarter (see Graphs 1.1.13 and 1.1.14).[3]

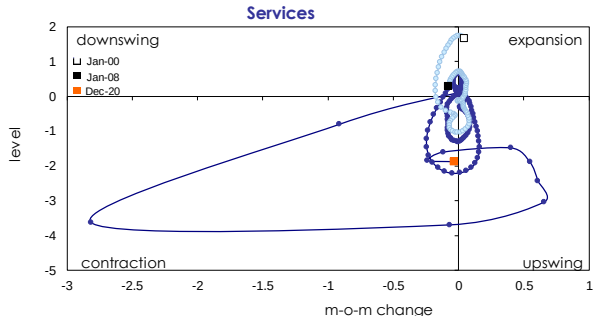
A similar path is visible also in the dedicated climate tracers for all the surveyed sectors (see Graph 1.1.15). The tracers for industry, retail trade and consumers are in the upswing area, while the tracer for the services sector is just at the border between the contraction and the upswing quadrant. The tracer for the euro-area construction sector entered the expansion area, while it reached the boundary between the upswing and the expansion quadrants for the EU.

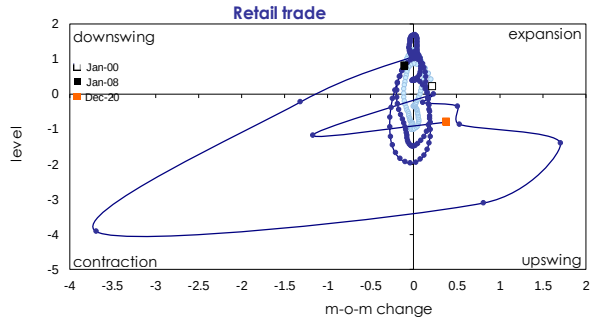
[3] To avoid that the recent sudden declines and recoveries in the indicators are smoothed out by averaging with pre-crisis observations, the observations since March, unlike all previous observations, have not been run through the usual HP filter. This applies to all climate tracer graphs in this edition.

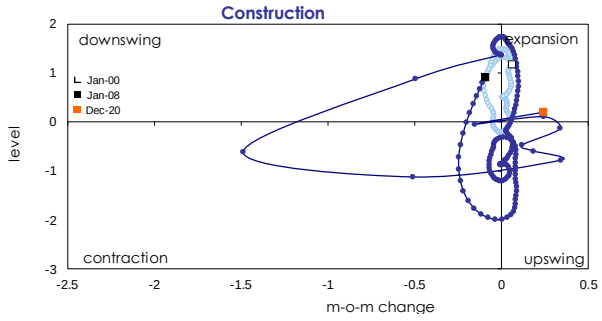
Graph 1.1.15: Economic climate tracers across sectors

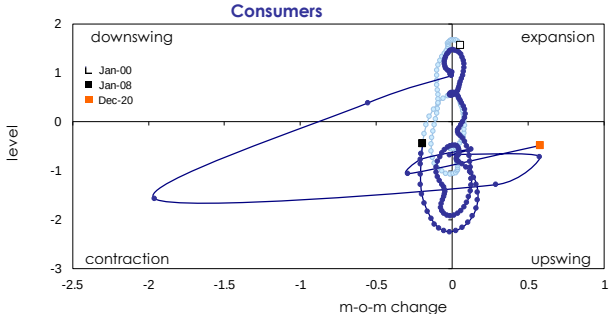
Euro area



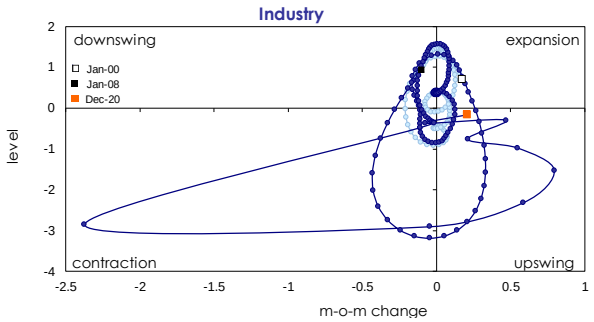


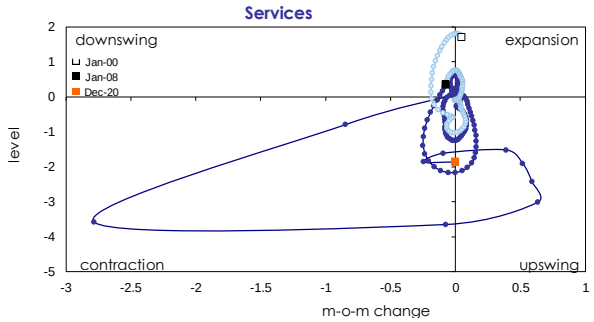


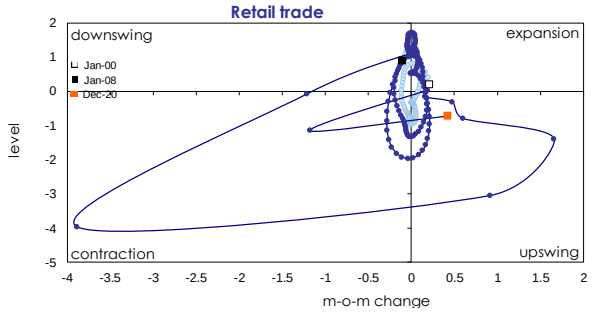


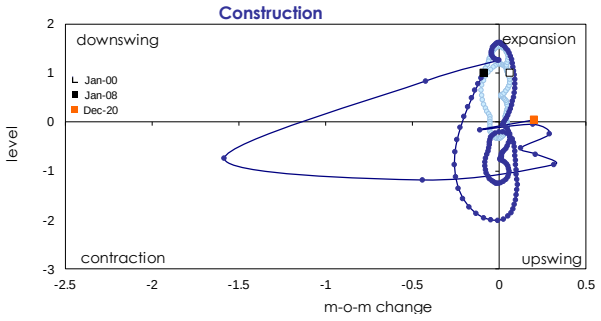


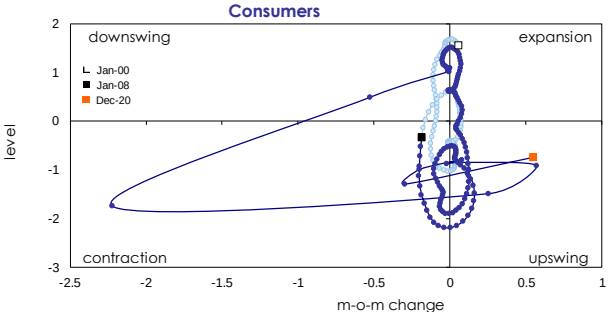
EU











1.2. Selected Member States

Over the fourth quarter, confidence showed some volatility in all large Member States and in most sectors. All in all, over the period from September to December, sentiment decreased strongly in France (−5.7) and mildly in Poland (−1.3) and Germany (−1.2). Confidence remained broadly stable in Italy (−0.7), while it improved in the Netherlands (+1.3) and Spain (+1.1).

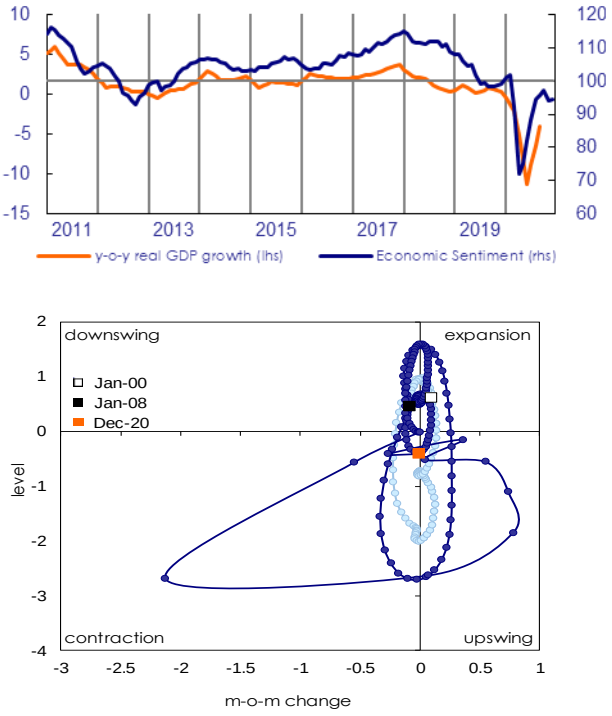
Compared with September, sentiment in **Germany** lost 1.2 points until December. Sentiment increased strongly in October, fell markedly in November and remained broadly unchanged in December. At the end of the year, the ESI was at 94.3 points, still below the long-term average of 100.

The volatility during the fourth quarter pushed the climate tracer for Germany in and out of the contraction quadrant. In December it was just at the border of the contraction area with the upswing quadrant (see Graph 1.2.1).[4]

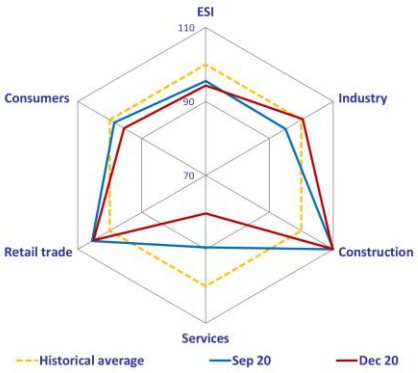
The Employment Expectations Indicator (EEI) decreased (−2.0 points in December compared to September) due to an important drop in December that offset two slight increases in the previous two months. At the sector level, employment expectations increased substantially in industry, while managers were more pessimistic in services, retail trade and construction.

From a sectoral perspective, confidence rose markedly in industry, while the indicator plummeted in services and, to a lesser extent, among consumers. In retail trade and construction, confidence remained broadly stable. Confidence indicators for construction and retail trade are scoring well above their long-term averages, while in industry the indicator is now just above it. By contrast, confidence among consumers and, particularly, in services are far below average (see Graph 1.2.2).

Graph 1.2.1: Economic Sentiment Indicator and Climate Tracer for Germany



Graph 1.2.2: Radar Chart for Germany

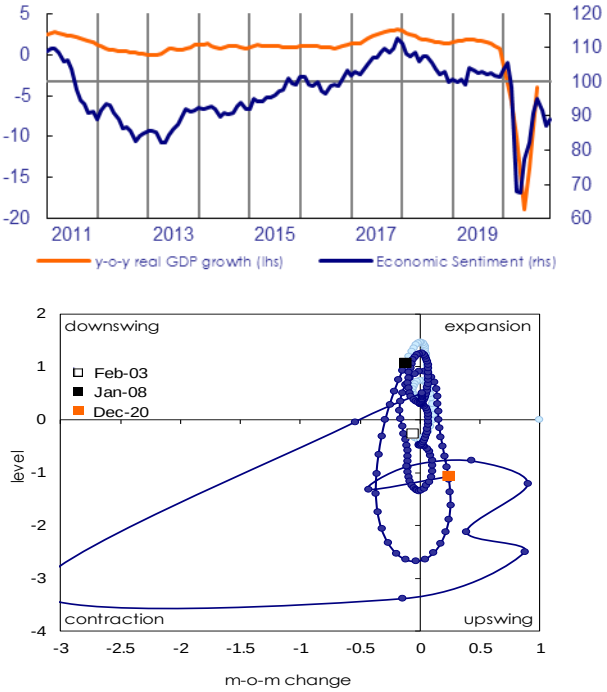


In **France,** the ESI plunged in October and November and recovered partially in December. In total, the indicator lost 5.7 points over 2020-Q4. At 89.2 points, the indicator is well below its long-term average of 100.

Based on the latest sentiment data, during 2020-Q4, the French climate tracer went to the contraction area and then came back to the upswing quadrant (see Graph 1.2.3).

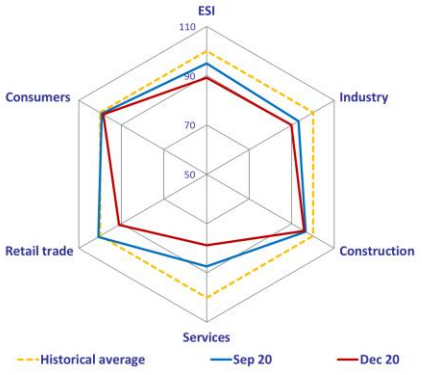
[4] All observations since March of all climate tracers have not been smoothed (filtered), see footnote 3.

Graph 1.2.3: Economic Sentiment Indicator and Climate Tracer for France



After two substantial declines in October and November, the EEI recovered somewhat in December and, at the end of 2020, the indicator was 10.2 points lower than in September. Substantial decreases were registered in services and, to a minor degree, in retail trade. Managers in the industry sector revised their employment plans upward, while in the construction sector, employment expectations remained broadly stable.

Graph 1.2.4: Radar Chart for France

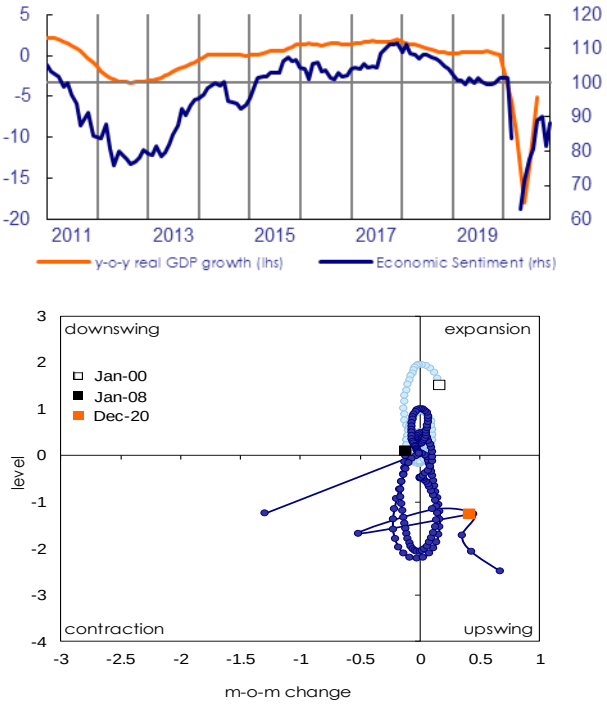


The French radar chart (see Graph 1.2.4) shows that the most severe decreases were registered in services and retail trade. Confidence worsened slightly in industry and construction, while it remained broadly stable among consumers. Confidence among consumers now scores very close to the long-term average, while confidence in the other sector remains below.

In **Italy**, Sentiment went up and down during 2020-Q4, ending the year broadly at the same level (−0.7) as in September. At 88.3 points, the indicator is markedly below its long-term average of 100. In line with the volatility observed in the sentiment indicator, the Italian climate tracer moved in and out of the contraction quadrant and laid in the upswing quadrant at the end of the year (see Graph 1.2.5)

The Italian EEI worsened (−3.2 points in December compared to September), reflecting substantial decreases in employment plans in services and retail trade, which were only partially balanced by increases in industry and construction.

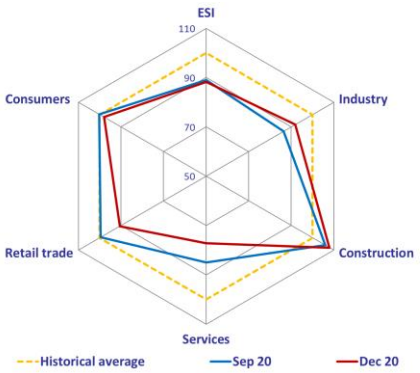
Graph 1.2.5: Economic Sentiment Indicator and Climate Tracer for Italy



A look at the Italian radar chart (see Graph 1.2.6) shows that confidence declined substantially in services, retail trade and, less so, among consumers. By contrast, confidence improved strongly in industry and, to a lesser extent, in construction. Confidence levels

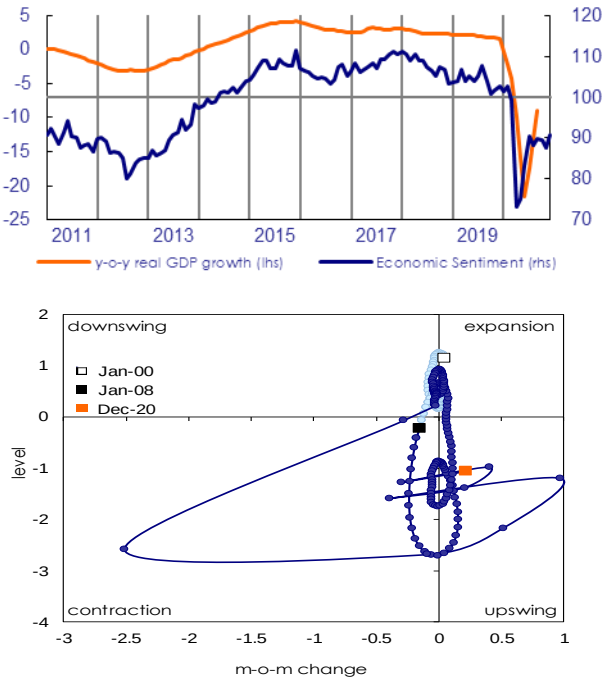
continue to be far below their long-term averages in industry, services, retail trade and among consumers, while confidence in construction is well above its long-term average. In all sectors, confidence continues to score well below February levels.

Graph 1.2.6: Radar Chart for Italy



For some months now, the ESI for **Spain** has been swinging around the level reached in July and currently stands at 90.8 points, i.e., 1.1 points above its September reading but markedly below the long-term average. The indicator increased strongly in October, declined sharply in November and picked up markedly in December. Mirroring the recent volatile developments during 2020-Q4, the Spanish climate tracer jumped from the upswing area to the contraction quadrant and returned to the upswing area in December (see Graph 1.2.7).

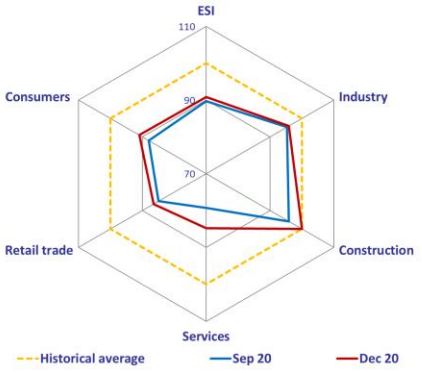
Graph 1.2.7: Economic Sentiment Indicator and Climate Tracer for Spain



The Spanish EEI followed a somewhat volatile path as well, ending the year at a broadly stable level compared to the end of the third quarter (+0.7 points in December compared to September). Employment plans increased markedly in construction, retail and, less so, in industry. By contrast, managers' employment plans were revised down in services.

As shown in the radar chart (see Graph 1.2.8), higher confidence resulted mainly from strikingly rising confidence in services, construction and smaller improvements in retail trade and among consumers. In industry, confidence remained broadly unchanged at its September level. In December, the indicators in all the sectors except for construction were far below their respective long-term averages. The construction confidence indicator stands now at its long-term average, but still well below the February level.

Graph 1.2.8: Radar Chart for Spain

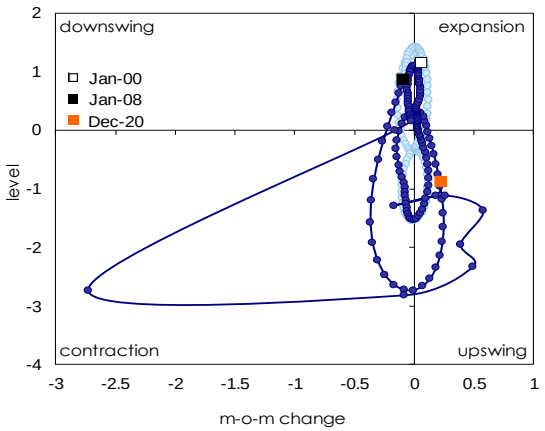


In the **Netherlands**, sentiment gained 1.3 points from September to December, bringing the ESI to 93.2, but remaining below its long-term average of 100. The indicator experienced some volatility during the quarter. Consequently, the Dutch climate tracer entered the contraction quadrant and returned to the upswing quadrant (see Graph 1.2.9).

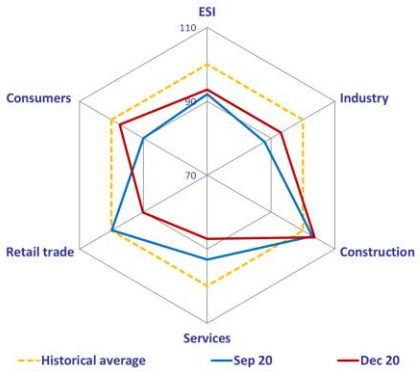
In the Netherlands, the EEI remained broadly unchanged at the September level (−0.1 points in December compared to September), resulting from an increase of managers' employment plans in construction offset by small decreases in industry and retail trade. Managers' employment plans in services were unchanged in December compared to September.

Sentiment plummeted in services and retail trade, while improving strongly in industry, among consumers and, to a lesser extent, in construction. Confidence in industry, services, retail trade and among consumers remained below its respective long-term average, while in construction, confidence is above average (see Graph 1.2.10). Construction is also the sector that recovered most of the losses recorded during the crisis, while in all other business sectors, confidence is still far below the February 2020 level.

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



Graph 1.2.10: Radar Chart for the Netherlands

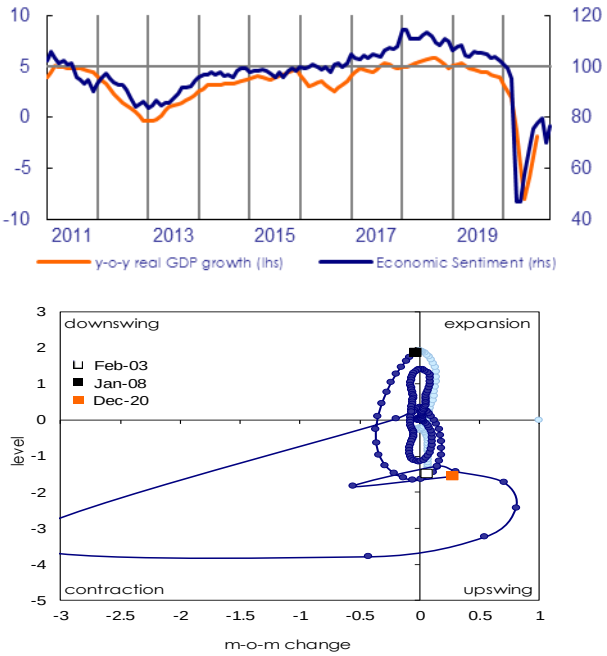


In **Poland**, sentiment decreased slightly during the fourth quarter of 2020 (−1.3 points in December compared to September). In Poland as well, the indicator followed a volatile path, decreasing strongly in November and picking up markedly in December. At 76.6 points, the indicator is still very far below its long-term average of 100 and its February level of 99.2. The Polish climate tracer remains in the upswing area, but, as in the case of other large EU countries, went temporarily into the contraction quadrant during the fourth quarter (see Graph 1.2.11).

The decrease in the Polish EEI (−1.2 points in December compared to September) resulted from improved employment plans in

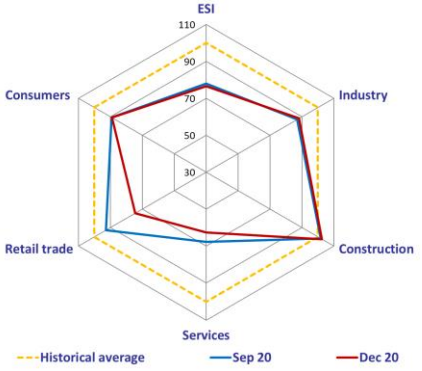
construction offset by managers' worsening employment expectations in retail trade. Employment plans in industry and services remained broadly stable.

Graph 1.2.11: Economic Sentiment Indicator and Climate Tracer for Poland



As the radar chart shows (see Graph 1.2.12), confidence dived in retail trade and decreased markedly also in services. By contrast, confidence increased slightly in construction and remained broadly at the same level as in September in industry and among consumers. The level of confidence is markedly below long-term average in all sectors, except for construction.

Graph 1.2.12: Radar Chart for Poland



2. SPECIAL TOPIC: RESULTS OF THE AUTUMN 2020 EU INVESTMENT SURVEY IN THE MANUFACTURING SECTOR

The COVID-19 pandemic has dealt an unprecedented blow to the European economy. Following the first infection wave in spring 2020, which brought far-reaching restrictions to mobility and economic activity in most countries and reduced the volume of GDP to a level last seen in 2005, the summer months saw an impressive rebound, as the various restrictions on economic activity were gradually lifted. Starting in autumn though, spiralling infection numbers have led to the reintroduction or tightening of virus containment measures across the continent. The withdrawal of such measures will depend on the speed and success of the vaccination campaigns currently under way, as well as the evolution of the pandemic and the possible emergence of more contagious strains of the virus.

The protracted pandemic crisis is taking a heavy toll on firms' investment activity. On the one hand, the virus containment measures imposed in spring and, to a lesser extent, the more targeted ones enacted in autumn meant that a part of firms' spending plans could not be executed, for the simple reason that production was constrained. On the other hand, firms were (and continue being) faced with high uncertainty as to the future course of the pandemic and hence about future levels of demand for their products, leading to the postponement of their investment plans.

National accounts data on total gross fixed capital formation document a sharp decline in investment in the first two quarters of 2020 (-5.7% and -16.1% respectively) for the euro area (EA), followed by a strong, though partial rebound in the third quarter (+13.5%). Compared to 2019-Q4, investment has thus accumulated a decline of 10.2% in the first nine months of 2020.

The intriguing question is how investment evolved in the last quarter of the year 2020, for which national accounts will not be released before early March,[5] and how investment is likely to behave in 2021.

The present article provides insights in both respects, based on the harmonised EU investment survey for the manufacturing sector. The survey was conducted in October/November 2020 and inquired about the investment growth firms expected in 2020, as well as their planned investment growth for 2021.

A first illustration of the detrimental effect of the pandemic and associated containment measures on firms' investment decisions is provided in Graph 2.1, which displays real[6] manufacturing investment growth in 2020, as reported by firms in October/November 2020 (y-axis), alongside the investment growth for 2020 which firms had predicted in October/November 2019 (x-axis). The blue line separates countries where the 2020 investment plans surveyed in 2019 were more benign than those surveyed in 2020 (area right of the blue line) from countries in which investment in 2020 looked better than predicted in 2019 (area left of the blue line).

With the exception of three countries[7], the surveyed firms in all EA countries reported much lower investment growth at the end of 2020 than a year earlier. Of the 16 countries which posted a downward correction, the average gap to the previous year's investment plans (vertical distance between dots and

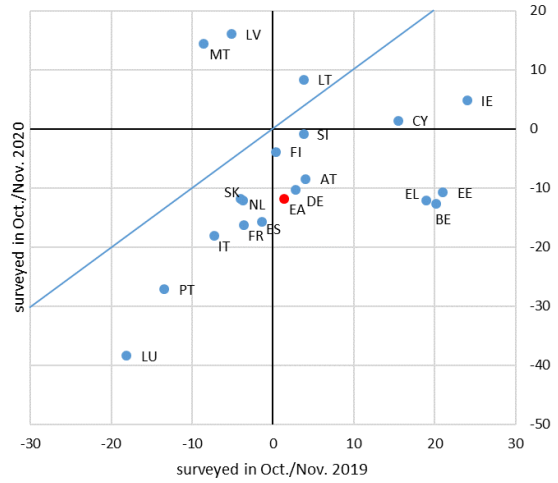
[5] Eurostat GDP flash estimate for Q4-2020 and 2020 as a whole will be released on 9 March.

[6] Survey data are deflated by the deflator for gross fixed capital formation (total economy).

[7] It should be noted that the investment survey in the three countries in question (Malta, Latvia, Lithuania) is based on rather small samples, leading to elevated volatility levels and, arguably, a lower representativeness of reported investment growth levels.

diagonal line) amounted to 15.8pp. The gap for the EA-aggregate was -13.3pp.

Graph 2.1: Surveyed real investment growth in 2020 (y-o-y, %)



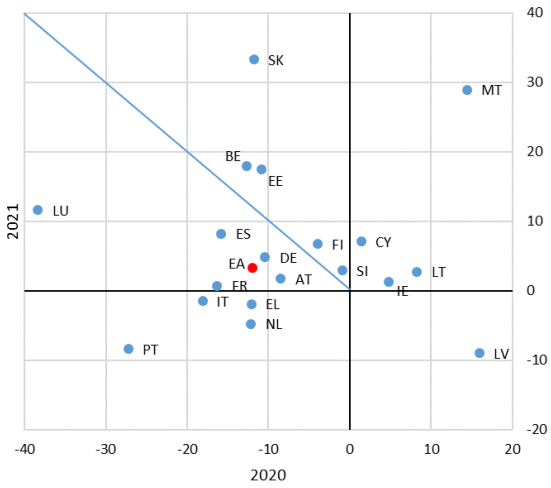
Source: Commission services and authors' calculations.

The figures are qualitatively in line with the 2020 results of the European Investment Bank Group survey on investment and investment finance, which found that around "a third … of firms [with investment plans in the EU] say they will delay or abandon at least some of their investment plans due to COVID-19 [and] around one-fifth … expect to continue with at least some of their investment plans on a reduced scale".

Besides the magnitude of the revisions, Graph 2.1. illustrates that investment growth in 2020 was actually negative in 14 out of 19 EA countries. For the EA as a whole, the reported decline in investment reached as much as 11.9%. This picture is broadly in line with annual growth in equipment investment, as implied by the available Eurostat figures on equipment investment growth in the first three quarters of 2020[8]. In the case of all 16 EA countries for which the annual growth rates can be calculated they are negative. The same holds true for the EA-aggregate, where, in addition, the annual growth rate based on national accounts (-13.1%) is particularly close to the surveyed investment growth in 2020 (-11.9%).

A question of obvious interest is what the data have to say about firms' planned investment for 2021.

Graph 2.2: Real investment growth (y-o-y, %), as surveyed in Oct./Nov. 2020



Source: Commission services and authors' calculations.

Graph 2.2. compares firms' self-reported investment growth in 2020 (x-axis) to their predictions for 2021 (y-axis). The picture dispels hopes for a forceful rebound in investment. Of the countries which saw investment contract in 2020 (left two quadrants), four predict a further decline in 2021 (IT, NL, EL, PT) and five, including Germany, France and Spain, do expect investment to pick up, but at a slower rate than the one at which investment contracted in 2020 (see upper left quadrant, area below blue line). As a result, investment activity for the EA as a whole looks set to recover only partially from last year's slump.

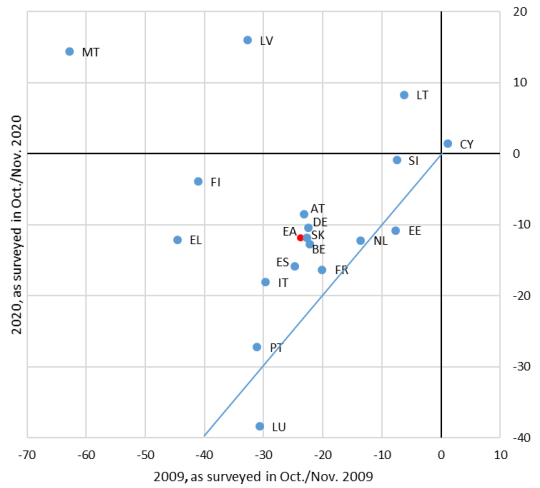
How do the survey results compare to those recorded during the financial crisis?

To better assess the severity of firms' investment downturn, the force of the expected recovery and, finally, the plausibility of the self-reported results, the investment survey results for 2020 can be compared to survey results collected in previous recessions.

[8] The annual growth rates are calculated by considering the quarter-on-quarter (q-o-q) growth rates of the first three quarters and assuming investment stayed flat in the fourth quarter.

Over the last decades, the only crisis with a severity that comes close to the 2020 crunch is the Great Financial Crisis (GFC). While the crisis started in 2008, 2009 is the obvious choice for a comparison, as around two thirds of the GDP decline recorded during the GFC occurred in that year and its third quarter marked the onset of the recovery[9].

Graph 2.3: Surveyed real investment growth (y-o-y, %)



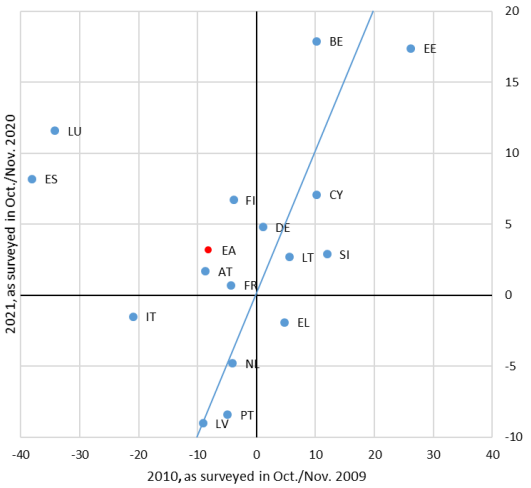
Source: Commission services and authors' calculations.

Graph 2.3. plots firms' self-reported investment growth at the end of the crisis years 2009 (x-axis) and 2020 (y-axis). The blue line separates countries where investment activity in 2020 declined at a higher rate than in 2009 (area right of the blue line) from those where investment in 2020 declined at a lower rate (area left of the blue line).

In 17 out of 19 EA countries, as well as the EA aggregate, investment took a smaller hit in the year of the pandemic than that of the GFC. At first glance, the finding is rather surprising, considering the unprecedented depth of the 2020 downturn, which saw industrial production in manufacturing decline by some 30% (vs. 20% in the GFC). However, the figures can be explained by taking into account the markedly different speed at which economic activity rebounded. In the 2020-crisis it took only three months (May to July) for industrial production in manufacturing to revert 78% of the losses incurred in March and April. In the GFC, by contrast, it took about 2 ½ years to achieve the same result. The difference can also be illustrated by firms' self-reported capacity utilisation rates, which reached 76.3% in October 2020 vs. 70.6% in October 2009.

When comparing firms' investment plans for the following year, as surveyed at the end of the crisis years 2009 (Graph 2.4., x-axis) and 2020 (y-axis), a similar picture emerges. In the largest EA countries (DE, FR, IT, ES) and, accordingly, in the EA as a whole, investment growth planned for 2021 is higher than for 2010 (see countries locating left of the blue line). For the EA-aggregate, the difference amounts to as much as 11.3pp.

Graph 2.4: Surveyed real investment growth (y-o-y, %)



Source: Commission services and authors' calculations.

A possible explanation for the more optimistic investment plans surely lies in the distinctly different nature of the current crisis as compared to the GFC. At present, economic activity is subdued due to an exogenous shock (namely the COVID-19 virus), which requires the imposition of restrictions to mobility and economic activity. It is fair to assume that, once the virus is brought under control and the containment measures can be lifted, economic activity can quickly recover, including

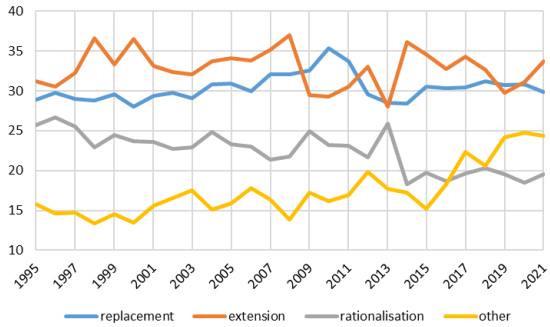
[9] When comparing the survey results for the two years, it should be borne in mind that the intensity of the economic shock differed between the two years: EA GDP declined by 4.5% in 2009, while the European Commission's latest Autumn Forecast predicts growth in 2020 to have contracted by as much as 7.8%.

through the release of pent-up demand. In this context, the swift deployment of vaccines, which already started at the end of 2020, bode well for the economic and investment outlook in 2021[10].

By comparison, the GFC was a typical endogenous crisis, which originated in deep weaknesses in the financial system that had built up out of sight.[11] The recovery took time, given the multiple negative feedback loops it generated throughout the economies, which eventually led to a debt crisis and forced many households, firms and governments to embark on a lengthy deleveraging process. The deleveraging needs of financial corporations had a knock-on effect on bank lending conditions, with firms' access to external financing, which is often a necessary pre-condition for investments to take place, seriously hampered.

The different nature of the two crises also shows in the structure of firms' investments (see Graph 2.5.[12]). In 2020, the structure of investments remained broadly the same as in the preceding year. This means that investments focussing on the rationalisation or replacement of worn-out plants or equipment were cut to the same extent as investments focussing on the extension of production capacity[13].

Graph 2.5: Surveyed structure of EA investment* (% of total investment)



** The values for the years 1995-2019 represent firms' assessments as captured in Oct./Nov. of year t. The values for 2020 and 2021 correspond to the results of the latest investment survey conducted in Oct./Nov. 2020.*

Source: Commission services and authors' calculations.

The moderation of investment activity thus does not seem to reflect concerns about a possible long-term demand weakness, which would have motivated a focus on restrained extension investments, but rather a generalised "wait-and-see" attitude amid the uncertainty about the further evolution of the pandemic and its impact on firms' short-term business perspectives. In the GFC, by contrast, the share of extension investments declined significantly (see value for 2009) and started to recover only in 2012.

How "uncertain" are firms' investment forecasts for 2021?

Having analysed the investment dynamics implied by the latest survey results, an interesting question is whether anything can be said about the degree of uncertainty surrounding the surveyed investment plans. This relates in particular to the 2021 investment plans. Does the investment growth predicted for 2021 result from wishful thinking ("once the pandemic is tamed, demand will increase again and we will start investing"), or does it reflect developments that have already materialised, such as increased orders?

To shed light on this question, Graph 2.6. compares two time-series. The blue line

[10] At the same time, however, the protracted pandemic crisis may leave lasting damage in the productive fabric of the Member States, including in the form of a rising number of insolvencies, which poses a downside risk to the investment plans reported by firms.

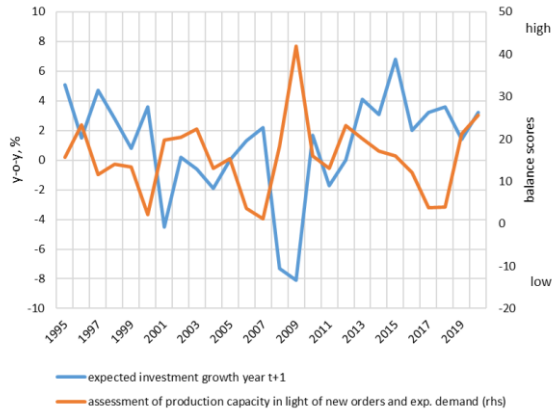
[11] https://voxeu.org/article/coronavirus-crisis-no-2008

[12] An interesting aspect shown in the graph is the persistent increase of the relative share of "other" investments since 2016. The trend most likely reflects the growing volume of investments fostering a green transition of the manufacturing sector. A profound analysis of that trend is available in the European Investment Bank Group survey on investment and investment finance 2020.

[13] The term "production capacity" is not further specified on the harmonised questionnaire. It can thus be assumed that respondents consider all possible types of investments potentially enhancing their production capacity, i.e. new machines and software, just as well as, certain construction projects.

represents firms' planned investment growth for year t+1 (y-o-y, %), as surveyed in Oct./Nov. of year t. The last point reported in the graph is thus the investment growth planned for 2021, as reported by firms at the end of 2020. The orange line captures how firms, in October[14] of year t, assessed their production capacity in the light of current order books and the expected change in demand over the coming months. The higher the value of this variable, the more dominant is the share of firms that consider their production capacity as "more than sufficient"[15].

Graph 2.6: Expected real EA investment growth & assessment of production capacity, both surveyed in Oct./Nov. of year t



Source: Commission services and authors' calculations.

The graph clearly shows that there is a negative correlation between the two series: the more excess production capacity firms deem to have (relative to orders and expected demand), the less they plan to invest.

Interestingly, the results for the two time series reported in 2020 are rather atypical. While excess capacity is at its highest level since the GFC, investment plans are above their long-term average. The finding suggests that firms' investment plans for 2021 are subject to a high degree of uncertainty. After all, the usual conditions underpinning investment plans (more orders/higher demand) do not seem to have materialised at all so far. A likely explanation for firms' reporting is that they assume that the pandemic will get tamed in the course of 2021, confinement measures lifted and demand recover. The positive signal emanating from the investment plans thus mainly illustrates managers' belief that the pandemic will get under control in 2021, rather than concrete economic developments.

How do firms' self-reported investment activities/plans compare to the European Commission's Autumn Forecast 2020?

A question of obvious interest to policy-makers is how the survey-based investment growth figures compare to official forecasts. For our analysis, we use the European Commission's Forecast of Autumn 2020 as a point of reference and focus on its predictions in respect of EA investment in equipment[16].

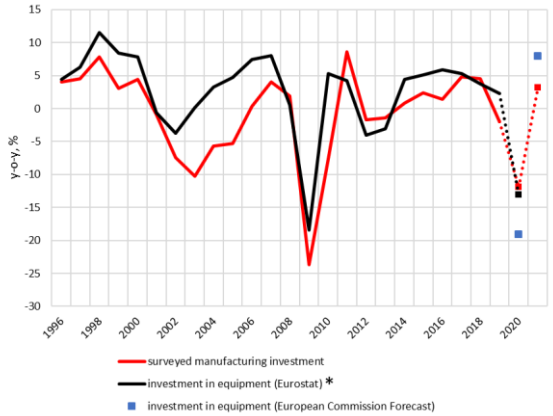
As Graph 2.7. shows, the survey-based investment figures track EA equipment investment rather well (correlation coefficient of 0.79 over the period 1996 to 2019).

[14] The survey question is asked in the first month of each quarter.

[15] The exact wording of the question is: "Considering your current order books and the expected change in demand over the coming months, how do you assess your current production capacity? The current production capacity is….
+more than sufficient
=sufficient
−not sufficient". The presented series is the balance of the share of positive minus the share of negative replies.

[16] While macro-forecasters are typically also interested in total investment, construction investment and public investment, equipment investment is the aggregate which arguably has the largest overlap with the EU manufacturing investment survey.

Graph 2.7: Real EA investment in equipment and real manufacturing investment as surveyed in Oct./Nov. of year t



** The value for 2020 represents the annual growth that results from applying the q-o-q growth rates of the first three quarters of 2020, as published by Eurostat, and assuming investment stayed flat in the fourth quarter.*
Source: Commission services and authors' calculations.

For 2020, the survey results captured in October/November 2020 predict EA investment to have contracted by 11.9% and thus significantly less than what the Commission forecast suggests (-19.1%). Considering the quarter-on-quarter (q-o-q) growth rates of the first three quarters, as published by Eurostat, and assuming investment stayed flat in the fourth quarter, annual growth in equipment investment would settle at -13.1% in 2020. This is somewhat less negative than expected in the Commission's Autumn Forecast. Against this backdrop, the magnitude of the prediction generated by the survey appears realistic.

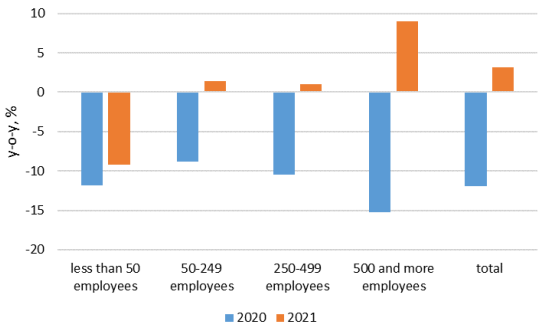
As regards 2021, the survey-based investment plans (as captured in October/November 2020) predict investment growth of 3.2%, which is clearly below the Commission's forecast (+8.0%). Considering the indications presented in a previous section according to which firms' investment plans for 2021 seem to be based on a best-case scenario (pandemic getting under control and confinement measures lifted), the Commission's Autumn forecast might turn out on the optimistic side.

Does investment activity differ across company types?

To assess whether the overall investment dynamics signalled by the survey are uniform across companies or mask some underlying divergence, we take a look at the breakdown of the results by company size and by sub-sector.

As suggested by Graph 2.8., firms' investment activity in 2020 was rather uniform across all company size groups[17]: it generally declined, at roughly comparable rates (9 to 15%). By contrast, firms' investment plans for 2021 seem to differ a lot: There is a fault line between firms with less than 50 employees (which expect a further decline) and the rest (which expects a rebound). Furthermore, the group of largest firms expects much stronger investment growth than the two groups in the middle of the size breakdown (after having booked the sharpest declines in 2020).

Graph 2.8: Real EA investment growth by company size, as surveyed in Oct./Nov. 2020



Source: Commission services and authors' calculations.

A possible explanation for this finding is that firms in different size groups may face different economic situations. Namely, large manufacturing firms can, on average, be assumed to be more integrated into global markets and value chains and might thus profit more from the comparatively early and sustained rebound of Asian demand. Furthermore, smaller firms tend to have more difficulties to receive external funding (both from public rescue schemes, as well as financial corporations) and may be undergoing more difficulties in the difficult COVID context.

[17] The breakdown of the EA investment survey results by company size does not include Spanish data, as their allocation across the four groups was inconsistent.

A look at enterprises' answers in the section of the investment survey asking them to qualify various factors as stimulating or dampening investment clearly refutes the hypothesis though. In fact, the group of smallest enterprises perceived both demand and access to finance as less of a dampening factor for their 2021-investment plans than the group of enterprises above 500 employees.

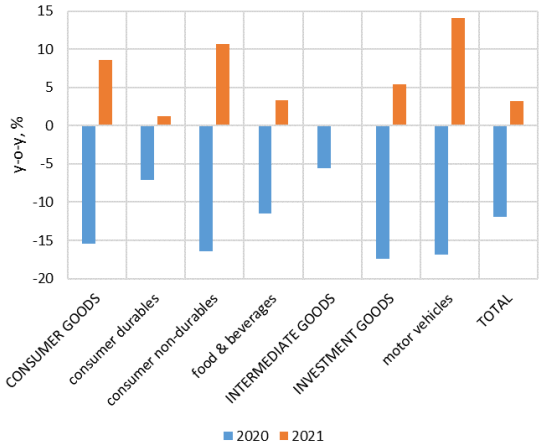
Another possible explanation could lie in different levels of risk aversion which would allow larger enterprises that tend to be owed by shareholders, rather than personally liable entrepreneurs, to intensify their investment activities at a comparatively early (and still fragile) stage of the recovery.

Turning to the breakdown of investment by sub-sectors (see Graph 2.9.), a number of divergences appear. First of all, the crisis seems to have had a much smaller impact on investment in the intermediate goods sector, when compared to firms producing consumer and investment goods. The difference manifests itself both in 2020 (smaller decline) and in 2021 (absence of a rebound).

Zooming into the consumer goods sector, the manufacturers of consumer durables report a far smaller decline in investments (in 2020) than producers of non-durable consumer goods / food and beverages. Conversely, the figures suggest that investment in 2021 will snap back in the non-durable consumer goods and (to a lesser extent) the food and beverages industry, while growth in the durable consumer sector is set to remain virtually flat.

These emerging different patterns can be explained considering that the confinement measures are likely to have increased demand for durable consumer goods, such as furniture to equip home offices[18], as well as consumer electronics to facilitate home entertainment (TVs, game consoles, etc.). At the same time, the temporary closure of shops selling non-essential items is likely to have dampened the sale of some non-durable consumer goods, such as wearing apparel[19].

Graph 2.9: Real EA investment growth by sub-sector, as surveyed in Oct./Nov. 2020



Source: Commission services and authors' calculations.

A final interesting observation emanating from Graph 2.9 is the particularly strong investment growth foreseen by car producers in 2021. A possible explanation could be the ongoing, sweeping transformation of the sector from combustion engines to electric vehicles which requires huge investments that probably only saw a short interruption in 2020 due to the pandemic.

Conclusions

The COVID-19 pandemic has dealt an unprecedented blow to the European economy, which also took its toll on firms' investment activity. The figures from the latest wave of the harmonised EU investment survey (conducted in October/November 2020) indicate that EA manufacturing firms' investment declined by 11.9% in 2020 and is planned to only see a partial and uneven recovery in 2021 (+3.2%).

Compared to the Great Financial Crisis (GFC), the 2020 decline in investment appears moderate, which can be explained by the fact that economic activity, albeit initially slowing

[18] It should be noted that computers and computer screens, which are likely to have been purchased a lot during the lockdown, are categorised as investment goods.

[19] The effect was probably alleviated by the availability of online stores.

more than in 2009, saw a much faster recovery (in 2020-Q3). Similarly, firms' investment plans for 2021 look more optimistic than in 2010, though still subdued, which might be due to the special nature of the current crisis, in which economic activity is constrained by external factors (containment measures) and is likely to quickly recover, once those factors disappear. By comparison, the GFC was a typical endogenous crisis, which originated in deep weaknesses in the financial system that had built up out of sight. The recovery took time, given the multiple negative feedback loops it generated throughout the economies, which eventually led to a debt crisis and forced many households, firms and governments to embark on a lengthy deleveraging process.

The different nature of the two crises also shows in the type of investments which companies scrapped. In 2009, there was a clear focus on investments aiming at the extension of production capacity, reflecting the belief that demand would remain weak for a prolonged period. In 2020, by contrast, firms reduced all types of investments alike, which hints at a generalised "wait-and-see" attitude.

Firms (still) consider their current production capacity as exceptionally high when compared to the level of orders and the expected change in demand over the coming months. This suggests that their investment plans for 2021 do not respond to the current economic situation and rather reflect the expectation that the pandemic will soon be put under control this year, allowing containment measures to be lifted and demand to bounce back. As such they are therefore subject to particularly high uncertainty.

Historically, the survey-based growth rates of EA manufacturing investment predict equipment investment growth rather well. In light of the already available hard data on equipment investment in the first three quarters of 2020, the survey-based annual growth forecast (-11.9%) appears plausible. The forecast of investment growth in 2021 (+3.2%) appears rather conservative when compared, for instance, to the European Commission's Forecast of Autumn 2020 (+8.0%). Considering that firms' investment plans for 2021 seem to be based on the assumption of a resolution of the pandemic crisis, forecasts well in excess of the results of the investment survey might turn out to be too optimistic.

The investment dynamics signalled by the survey for 2020 and 2021 are rather uniform across different types of firms and sub-sectors, with two exceptions. First of all, small firms (below 50 employees) expect negative investment growth in 2021, while large firms (500 and more employees) forecast a particularly sharp rebound in investment. The pattern, which has already been observed in the recovery following the Great Financial Crisis, might reflect a higher risk-aversion among smaller firms. Secondly, enterprises producing consumer durables have downscaled their investments far less in 2020 than those manufacturing non-durables. The finding most likely reflects increased demand for durable consumer goods during the crisis (furniture for home offices, consumer electronics for home entertainment, etc.), while temporary closures of shops selling non-essential items are likely to have dampened the sale of some non-durable consumer goods, such as wearing apparel.

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	2020				Average	2020				Average	2020				Average	2020			
	2004-2020	Q1	Q2	Q3	Q4	2004-2020	Q1	Q2	Q3	Q4	2004-2020	Q1	Q2	Q3	Q4	2004-2020	Q1	Q2	Q3	Q4
	Total																			
EU	8.8	7.1	7.9	8.0	7.2	3.8	2.9	3.3	3.5	3.0	6.4	5.0	5.5	5.9	5.1	11.0	8.5	9.7	9.9	9.1
EA	8.7	6.4	7.4	7.5	6.7	3.6	2.4	3.0	3.2	2.6	6.2	4.3	5.0	5.4	4.6	10.9	7.8	9.1	9.4	8.5
	Gender: Male																			
EU	7.7	6.0	6.7	6.8	6.0	3.4	2.6	2.9	3.1	2.6	5.7	4.3	4.8	5.0	4.5	9.6	7.4	8.4	8.8	7.7
EA	7.5	5.3	6.3	6.3	5.5	3.2	2.1	2.6	2.8	2.3	5.5	3.6	4.3	4.4	4.0	9.4	6.6	7.9	8.2	7.1
	Gender: Female																			
EU	10.0	8.5	9.3	9.5	8.8	4.2	3.3	4.0	4.2	3.7	7.3	5.8	6.7	7.1	6.5	12.6	10.4	12.1	12.1	11.1
EA	9.9	7.8	8.8	9.0	8.3	4.1	2.8	3.7	3.9	3.3	7.1	5.1	6.1	6.6	6.0	12.6	9.8	11.5	11.6	10.5
	Age: 16 to 29																			
EU	9.1	7.3	7.2	7.6	6.5	3.9	2.9	2.6	2.9	2.8	6.8	5.2	4.8	5.7	5.1	11.8	9.3	9.6	9.9	8.2
EA	9.1	6.7	6.9	7.1	5.9	3.8	2.5	2.4	2.6	2.4	6.8	4.7	4.4	5.2	4.6	11.9	8.8	9.2	9.4	7.6
	Age: 30 to 49																			
EU	9.0	7.3	8.3	8.2	7.3	3.9	3.0	3.6	3.7	3.1	6.6	5.2	6.0	5.9	5.3	11.3	8.8	10.4	10.3	9.1
EA	8.9	6.6	7.9	7.7	6.9	3.7	2.5	3.4	3.4	2.7	6.4	4.5	5.5	5.5	4.8	11.2	8.1	9.9	9.8	8.6
	Age: 50 to 64																			
EU	8.7	7.4	8.1	8.2	7.5	3.8	3.1	3.8	3.8	3.3	6.4	5.2	6.0	6.3	5.5	10.8	9.1	10.2	10.3	9.3
EA	8.5	6.7	7.5	7.7	7.0	3.6	2.5	3.4	3.4	2.9	6.1	4.5	5.5	5.7	4.9	10.6	8.5	9.6	9.8	8.6
	Age: 65+																			
EU	8.5	6.5	7.4	7.8	7.2	3.9	2.8	3.4	3.6	3.2	6.4	4.7	5.5	5.8	5.3	10.6	7.8	9.3	10.0	9.3
EA	8.2	5.6	6.5	7.2	6.5	3.6	2.3	3.0	3.2	2.7	6.0	3.9	4.7	5.2	4.7	10.2	6.8	8.4	9.3	8.5
	Income: 1st quartile																			
EU	10.9	9.5	10.0	10.6	9.8	4.5	3.4	4.2	4.6	4.0	7.9	6.3	7.0	7.7	6.9	14.0	12.1	13.2	13.4	12.6
EA	10.9	8.9	9.6	10.1	9.4	4.3	2.9	4.0	4.3	3.7	7.7	5.7	6.6	7.2	6.4	14.0	11.7	12.6	12.8	12.1
	Income: 2nd quartile																			
EU	9.2	7.7	8.4	8.9	7.8	4.0	3.2	3.8	4.1	3.4	6.9	5.4	6.4	7.1	6.0	11.8	9.2	10.4	11.7	10.0
EA	9.1	7.0	7.7	8.5	7.3	3.8	2.8	3.4	3.7	3.0	6.6	4.8	5.8	6.6	5.4	11.6	8.5	9.6	11.3	9.4
	Income: 3rd quartile																			
EU	8.3	6.4	7.7	7.4	7.0	3.7	2.7	3.4	3.4	3.1	6.2	4.8	5.6	5.6	5.3	10.5	7.8	10.0	9.6	8.9
EA	6.8	4.6	5.5	5.5	4.6	3.0	1.9	2.3	2.4	1.9	5.0	3.2	3.9	4.2	3.4	8.5	5.8	6.8	7.2	6.0
	Income: 4th quartile																			
EU	7.0	5.5	6.0	6.1	5.2	3.2	2.5	2.7	2.8	2.3	5.3	4.0	4.4	4.7	4.0	8.8	6.7	7.5	7.9	6.7
EA	6.8	4.6	5.5	5.5	4.6	3.0	1.9	2.3	2.4	1.9	5.0	3.2	3.9	4.2	3.4	8.5	5.8	6.8	7.2	6.0
	Education: Primary																			
EU	10.1	8.9	9.4	9.6	9.4	4.3	3.7	4.1	4.2	4.0	7.3	6.0	6.7	6.9	6.6	12.8	11.2	12.4	12.5	11.7
EA	10.0	8.3	8.8	9.1	8.9	4.0	3.3	3.7	3.9	3.6	7.0	5.4	6.1	6.4	6.1	12.6	10.5	11.8	12.0	11.0
	Education: Secondary																			
EU	8.8	7.6	8.4	8.5	7.6	3.8	2.9	3.5	3.7	3.2	6.5	5.2	5.9	6.2	5.6	11.1	9.1	10.4	10.8	9.5
EA	8.7	6.9	7.9	8.0	7.1	3.6	2.4	3.2	3.3	2.9	6.2	4.5	5.3	5.7	5.1	11.0	8.5	9.8	10.2	8.8
	Education: Further																			
EU	7.1	5.4	6.3	6.5	5.7	3.2	2.5	2.9	3.1	2.5	5.3	4.0	4.7	5.0	4.3	9.0	6.8	7.8	8.4	7.5
EA	6.9	4.6	5.7	6.1	5.2	3.0	1.9	2.6	2.8	2.1	5.1	3.3	4.2	4.5	3.8	8.7	5.9	7.3	7.8	6.8

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

	weighted mean adjusted for outliers					25% quartile					median					75% quartile				
	Average	2020				Average	2020				Average	2020				Average	2020			
	2004-2020	Q1	Q2	Q3	Q4	2004-2020	Q1	Q2	Q3	Q4	2004-2020	Q1	Q2	Q3	Q4	2004-2020	Q1	Q2	Q3	Q4
	Total																			
EU	6.0	6.3	7.6	6.2	6.2	2.3	2.3	2.7	2.3	2.4	4.2	4.0	5.1	4.3	4.3	7.4	7.4	9.7	7.9	7.9
EA	5.7	5.5	6.9	5.6	5.6	2.0	1.8	2.3	1.9	1.9	3.8	3.3	4.5	3.8	3.7	6.9	6.5	8.9	7.2	7.2
	Gender: Male																			
EU	5.5	5.5	6.4	5.2	5.3	2.2	2.1	2.2	2.0	2.1	3.8	3.6	4.4	3.7	3.7	6.6	6.3	8.3	6.4	6.5
EA	5.1	4.7	5.8	4.7	4.7	1.9	1.5	1.8	1.7	1.7	3.4	2.9	3.9	3.2	3.2	6.1	5.3	7.6	5.7	5.8
	Gender: Female																			
EU	6.8	7.5	9.0	7.5	7.4	2.5	2.5	3.3	2.6	2.7	4.7	4.9	6.2	5.1	5.0	8.5	9.2	11.3	9.5	9.7
EA	6.4	6.7	8.2	6.8	6.8	2.2	2.0	2.8	2.2	2.3	4.3	4.2	5.5	4.5	4.4	8.0	8.4	10.4	8.7	9.0
	Age: 16 to 29																			
EU	6.2	6.6	7.3	6.4	5.9	2.3	2.3	2.0	2.2	2.1	4.4	4.6	4.9	4.2	4.5	8.1	8.2	10.3	7.6	7.5
EA	6.0	5.9	6.7	5.7	5.2	2.1	2.0	1.6	1.8	1.7	4.1	4.0	4.5	3.7	4.0	7.8	7.5	9.7	6.8	6.7
	Age: 30 to 49																			
EU	6.2	6.4	7.7	6.4	6.4	2.3	2.3	2.6	2.2	2.4	4.2	4.2	5.4	4.2	4.3	7.7	7.8	9.7	8.0	8.0
EA	5.9	5.6	7.1	5.9	5.9	2.0	1.7	2.2	1.9	2.0	3.9	3.5	4.8	3.8	3.8	7.3	6.9	9.0	7.4	7.4
	Age: 50 to 64																			
EU	6.1	6.7	7.8	6.3	6.3	2.4	2.4	3.0	2.4	2.4	4.2	4.3	5.5	4.6	4.4	7.5	7.8	10.0	8.1	8.0
EA	5.6	5.9	7.1	5.7	5.7	2.1	1.9	2.5	2.0	1.9	3.8	3.6	4.8	3.9	3.8	6.9	6.8	9.0	7.5	7.3
	Age: 65+																			
EU	5.8	5.8	7.3	5.8	6.0	2.5	2.3	3.0	2.5	2.5	4.2	3.9	5.3	4.3	4.4	7.1	6.9	9.0	7.2	7.8
EA	5.2	4.8	6.3	5.1	5.4	2.1	1.7	2.5	2.1	2.0	3.6	3.0	4.5	3.7	3.8	6.4	5.7	7.9	6.4	7.0
	Income: 1st quartile																			
EU	7.4	8.4	9.2	8.2	8.1	2.7	2.8	3.2	2.8	2.9	5.1	5.2	6.2	5.3	5.4	9.5	10.2	12.2	10.1	10.7
EA	7.0	7.7	8.4	7.6	7.5	2.4	2.2	2.8	2.4	2.4	4.7	4.6	5.7	4.9	4.8	9.0	9.4	11.2	9.3	10.0
	Income: 2nd quartile																			
EU	6.4	6.8	8.3	6.6	6.9	2.5	2.6	2.9	2.4	2.7	4.5	4.5	5.9	4.7	4.9	8.1	8.7	11.0	8.3	9.0
EA	6.0	6.1	7.6	6.1	6.2	2.2	2.1	2.5	2.0	2.2	4.1	3.7	5.2	4.1	4.2	7.6	7.8	10.1	7.8	8.2
	Income: 3rd quartile																			
EU	5.8	5.7	7.5	5.8	6.1	2.3	2.2	2.8	2.3	2.3	4.1	3.8	5.4	4.2	4.2	7.2	6.9	9.6	7.6	8.1
EA	4.6	4.2	5.4	4.1	4.0	1.8	1.5	1.7	1.5	1.5	3.1	2.6	3.8	3.0	2.9	5.6	5.0	7.2	5.1	4.8
	Income: 4th quartile																			
EU	5.0	5.1	6.0	4.8	4.6	2.1	2.0	2.1	1.9	1.9	3.5	3.4	4.3	3.5	3.4	6.1	6.2	8.0	5.9	5.6
EA	4.6	4.2	5.4	4.1	4.0	1.8	1.5	1.7	1.5	1.5	3.1	2.6	3.8	3.0	2.9	5.6	5.0	7.2	5.1	4.8
	Education: Primary																			
EU	6.8	7.2	8.9	7.6	7.8	2.6	2.4	3.2	2.6	2.7	4.7	4.5	6.2	5.1	5.6	8.6	9.0	11.3	10.4	10.5
EA	6.4	6.5	8.1	7.2	7.2	2.2	2.0	2.8	2.3	2.2	4.3	3.9	5.7	4.6	5.0	8.0	8.2	10.3	9.9	9.9
	Education: Secondary																			
EU	6.2	7.0	8.2	6.6	6.5	2.3	2.5	2.9	2.4	2.4	4.3	4.5	5.5	4.5	4.5	7.7	8.5	10.3	8.3	8.3
EA	5.8	6.3	7.5	5.9	5.9	2.0	2.0	2.5	2.0	2.0	3.9	3.8	4.9	3.9	4.0	7.2	7.6	9.6	7.5	7.6
	Education: Further																			
EU	5.1	5.2	6.1	5.1	5.1	2.1	2.1	2.3	2.0	2.0	3.6	3.5	4.3	3.8	3.7	6.3	6.5	8.0	6.3	6.5
EA	4.8	4.2	5.4	4.6	4.5	1.8	1.5	1.9	1.7	1.6	3.3	2.8	3.7	3.3	3.1	5.8	5.2	7.2	5.7	5.8

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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