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European Business Cycle Indicators

A new survey-based
labour hoarding indicator

2nd Quarter 2023

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European Business Cycle Indicators

2nd Quarter 2023

Special topic

- A new survey-based labour hoarding indicator

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OVERVIEW

Recent developments in survey indicators

- After remaining broadly stable since the beginning of the year, the EU and euro-area **Economic Sentiment Indicator (ESI)** decreased markedly in May and June. By the end of the second quarter of this year, the indicator was 3.0 (EU) / 3.6 (EA) points lower compared to March and remained well below its long-term average of 100 in both the EU (at 94.0 points) and euro area (at 95.3 points).
- The EU/EA **Employment Expectations Indicator (EEI)** worsened markedly in April and May and slightly recovered in June. The indicator's level in June was 3.1 (EU) / 3.7 (EA) points lower than in March but remained significantly above long-term average.
- **Confidence** worsened over the second quarter in all the surveyed business sectors. The decrease was pronounced in industry and retail trade. Consumer confidence stood out with a further strong increase over the quarter, though from an exceptionally low level.
- **Economic sentiment worsened in four of the six largest EU economies**, namely in Germany (-4.1), the Netherlands (-4.0), Italy (-3.2) and France (-1.1). It stayed broadly unchanged in Spain (-0.3), while it improved in Poland (+2.9). Economic sentiment remains above the indicator's long-term average only in Italy.
- The EU/EA **Economic Uncertainty Indicator (EUI)** continued receding from its peak in autumn of last year, thanks to lower uncertainty perceptions in services, retail trade and among consumers. In industry and construction, the indicator remained broadly stable at its March levels. In June, the EUI was 2 points below its March reading in both the EU and the EA.
- In April, **capacity utilisation** in industry stayed broadly stable compared to January. At 81%, the indicator remained slightly above its long-term average. Capacity utilisation in services decreased marginally but remained above average.
- In April, the share of industry managers pointing to **shortage of material and/or equipment** as a factor limiting production declined further in both the EU (-9.2 percentage points compared to January) and the EA (-10.2 pps). At 23.7% (EU) / 24.1% (EA), the shares remain nevertheless at elevated levels. The percentage of managers indicating **shortages of labour force** as a factor limiting production edged down in the EU (-1.7 percentage points compared to January), while remaining broadly stable in the EA (-0.4 pps). At 26.3% (EU) / 25.4% (EA), the share is well below the record highs recorded in early 2022 but remain high by historical standards.
- **Consumers' perceptions of price developments** over the past 12 months in quantitative terms increased marginally, reaching a new all-time high, while **price expectations** for the next 12 months declined for the third quarter in a row but remained at very high levels.

Special topic: A new survey-based labour hoarding indicator

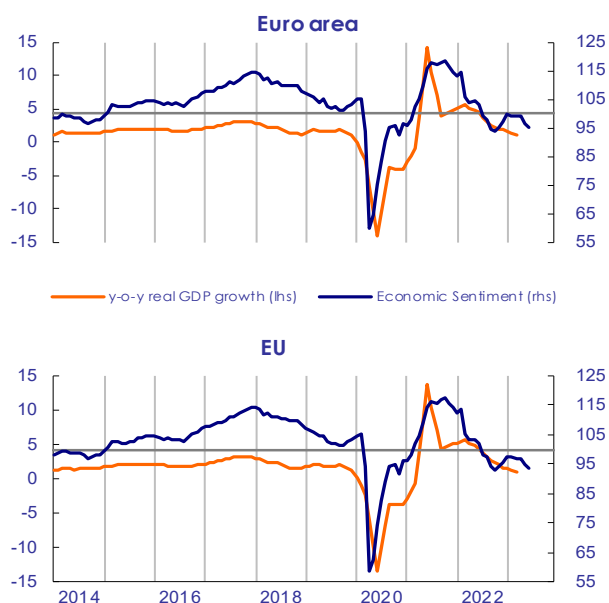
What is labour hoarding, how is it measured and why is it important for economists and policy makers? The European Commission has developed a new labour hoarding indicator based on its Joint Harmonised EU Programme of Business and Consumer Surveys (EU BCS) with the aim to more accurately track labour market performance over the cycle. This Special Topic explains how the new indicator works, discusses where it could be used and shows how it performed during recent business cycle episodes.

1. RECENT DEVELOPMENTS IN SURVEY INDICATORS

1.1. EU and euro area

After remaining broadly stable since the beginning of the year, the EU and euro-area **Economic Sentiment Indicator (ESI)** decreased markedly in May and June (see Graph 1.1.1). By the end of the second quarter of this year, the indicator was 3.0 (EU) / 3.6 (EA) points lower compared to March and remained well below its long-term average of 100 in both the EU (at 94.0 points) and euro area (at 95.3 points).

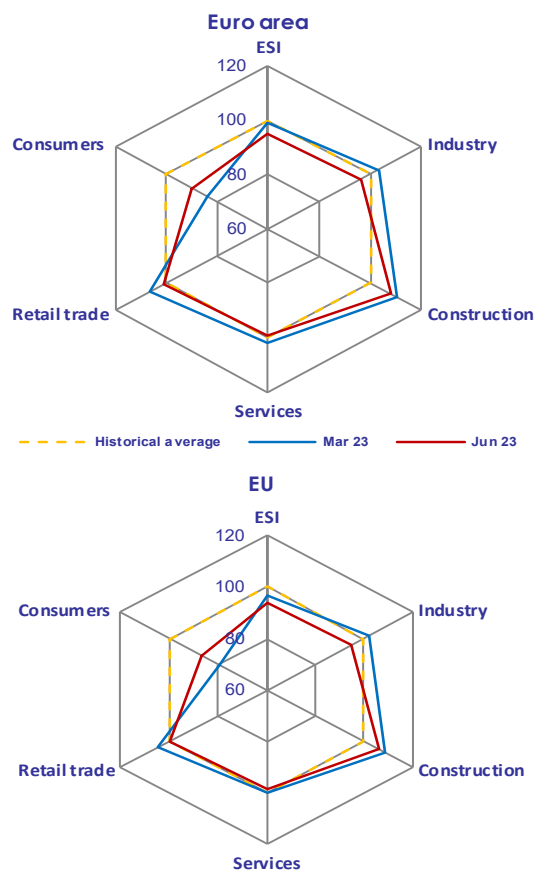
Graph 1.1.1: Economic Sentiment Indicator



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.

From a sectoral perspective, EU confidence (see lower panel of Graph 1.1.2) worsened over the second quarter in all surveyed business sectors. The decrease was particularly pronounced in industry and retail trade, and less so in services and construction. Consumer confidence stood out with a further strong increase from an exceptionally low level. Developments in the EA were broadly in line with those in the EU.

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 2000q1. For more information on the radar charts see the Special Topic in the 2016q1 EBCI.

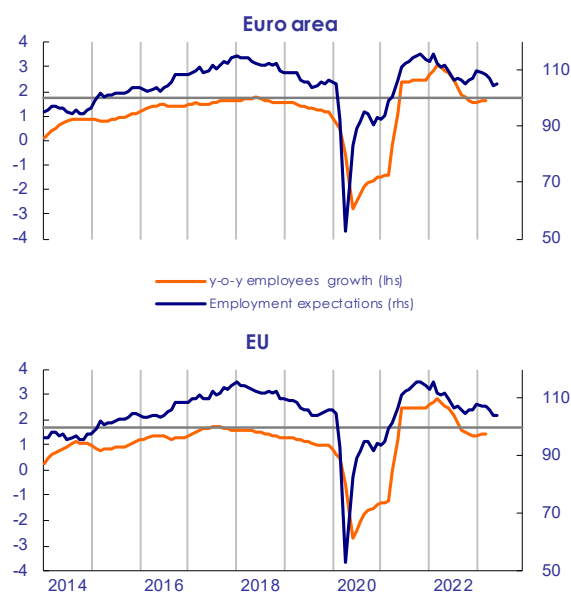
In June, in both the EU and the EA, the level of confidence exceeds long-term average only in construction, while it fell below it in industry and remained exceptionally low among consumers. In services and retail trade, confidence was around average.

In the second quarter, economic sentiment in four of the six largest EU economies worsened compared to March, namely in Germany (-4.1), the Netherlands (-4.0), Italy (-3.2) and France (-1.1). Sentiment in Spain (-0.3) stayed broadly unchanged, while it improved in Poland (+2.9). Compared to the indicator's long-term average, confidence remains above only in Italy. The

indicator is now just below its long-term average in Spain and remains well below in the remaining countries.

The signal of a halting recovery emanating from the ESI is consistent with the evolution of Standard & Poor's Eurozone Composite PMI¹, which also decreased during the second quarter. Losing 3.8 points compared to March, the PMI fell to 49.9, slightly below the threshold of 50.0, signalling a stalling of the euro area economy.

Graph 1.1.3: Employment expectations indicator

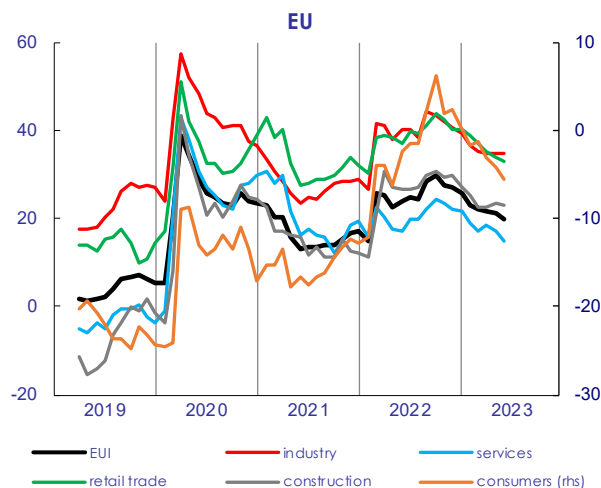


The EU/EA **Employment Expectations Indicator (EEI)** followed a slightly different path from the ESI, worsening markedly in April and May and slightly recovering in June. Similarly to the ESI, the indicator's level in June was 3.1 (EU) / 3.7 (EA) points lower than in March. However, unlike the ESI, the indicator remained significantly above long-term average. Employment expectations worsened markedly in industry and services and, less so, in construction. By contrast, the indicator improved in retail trade. In all the four sectors, the indicator remained above their respective long-term average.

¹ Contradictory signals from the EA ESI and the eurozone PMI can occur due to differences in their geographic and/or sectoral coverage, as well as the survey questions used for their construction. For a systematic comparison of the two indicators, see the special topic in the [2017-Q2 EBCI](#).

The EU/EA **Economic Uncertainty Indicator (EUI)**² continued receding from its peak in autumn of last year, thanks to lower uncertainty perceptions in services, retail trade and among consumers. In industry and construction, the indicator remained broadly stable at March levels. In June, the EUI was 2 points below its March reading in both the EU and the EA (see Graph 1.1.4).

Graph 1.1.4: Uncertainty

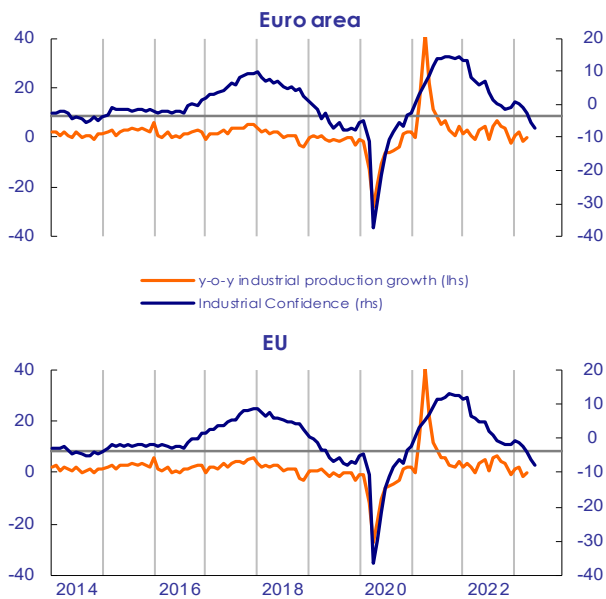


Sector developments

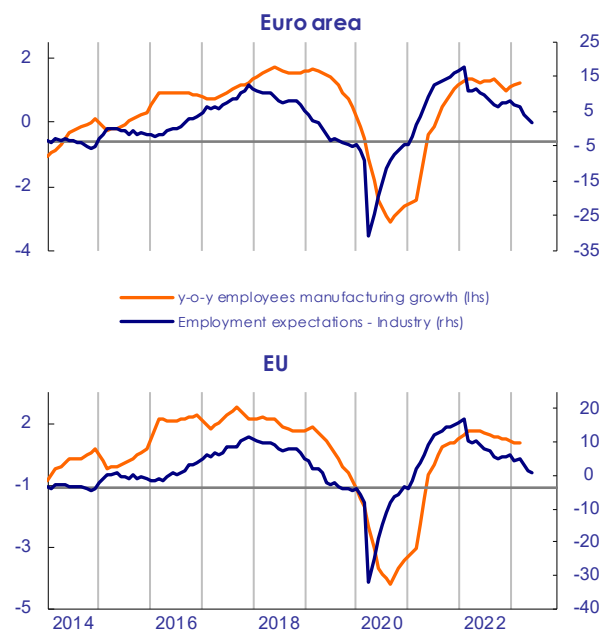
Industry confidence decreased markedly during the second quarter of 2023, resuming the downward trend visible since the aftermath of the outbreak of war in Ukraine in February 2022. Compared to March, the indicator's readings in June were significantly lower (-6.0 points in the EU, -6.4 points in the EA). As shown in Graph 1.1.5., industry confidence is now below its long-term average in both the EU and the EA.

² See the special topic of the [2021-Q3 EBCI](#) for background, and section 3.6 of the [BCS User Guide](#) for methodological details.

Graph 1.1.5: Industry Confidence indicator



Graph 1.1.6: Employment expectations in Industry



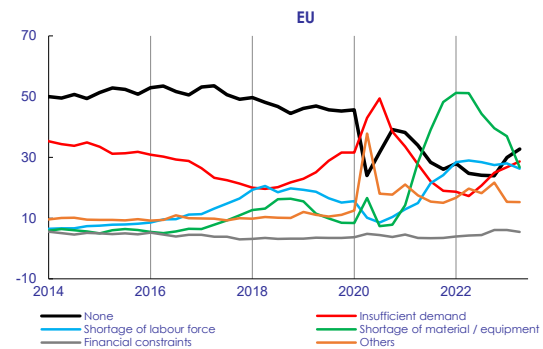
Zooming into the components of industrial confidence, the marked decrease resulted from substantial worsening in all its components (i.e., managers' **production expectations**, their assessments of their **order books** and **stocks**). Of the components not included in the confidence indicator, managers' appraisals of **past production** and of the current **export order books** also declined markedly.

Industry managers' **employment expectations** (see Graph 1.1.6) decreased markedly compared to March (-4.3 in the EU and -4.5 in the EA). Meanwhile, their **selling price expectations** continued the sharp decline observed since May last year, ending the second quarter 13.2 (EU) / 13.4 (EA) points below their level in March. Selling price expectations in industry are now below their long-term average.

Industry confidence worsened in all six largest EU economies. It fell sharply in Germany (-8.4), Spain (-5.1), Italy (-4.5) and the Netherlands (-3.5), and, to a lesser extent, in France (-3.0) and Poland (-2.5). The level of industry confidence in June is now below long-term averages in all six largest EU economies.

According to the quarterly manufacturing survey (carried out in April), **capacity utilisation** in both the EU and the EA stayed broadly stable compared to January (-0.2 and +0.2 percentage points, respectively). At 81.0% (EU) / 81.2% (EA), the indicator remained slightly above its long-term average of 80.6% (EU) / 80.7% (EA).

Graph 1.1.7: Industry – Factors limiting production (in %)

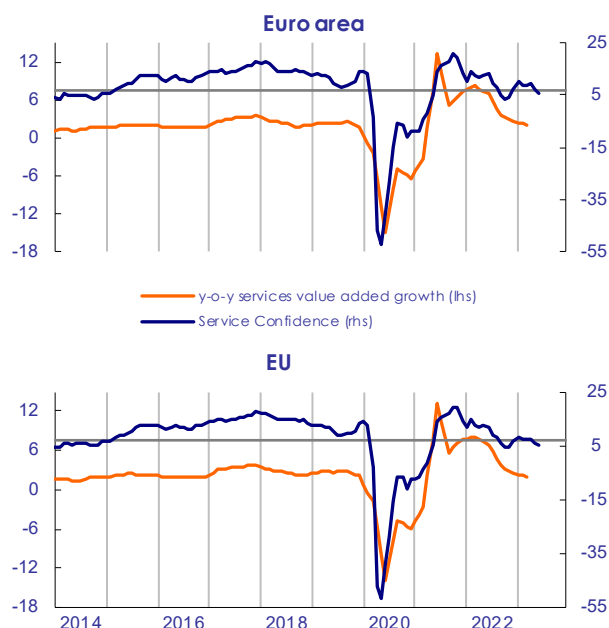


In April, the share of industry managers pointing to a shortage of material and/or equipment as a **factor limiting production** declined further in both the EU (-9.2 percentage points compared to January) and the EA (-10.2 pps). At 23.7% (EU) / 24.1% (EA), the shares remain nevertheless at elevated levels (see Graph 1.1.7). The percentage of managers indicating "shortages of labour force" as a factor limiting production edged down in the EU (-1.7 percentage points), while remaining broadly stable in the EA (-0.4 pps). At 26.3%

(EU) / 25.4% (EA), the share is well below the record highs recorded in early 2022 but remains high by historical averages.

The share of managers indicating financial constraints as a factor limiting their production decreased in April (-0.6 in the EU, -0.7 in the EA). At 5.5% (EU) / 5.1% (EA), perceived financial constraints remain limited.

Graph 1.1.8: Services Confidence indicator



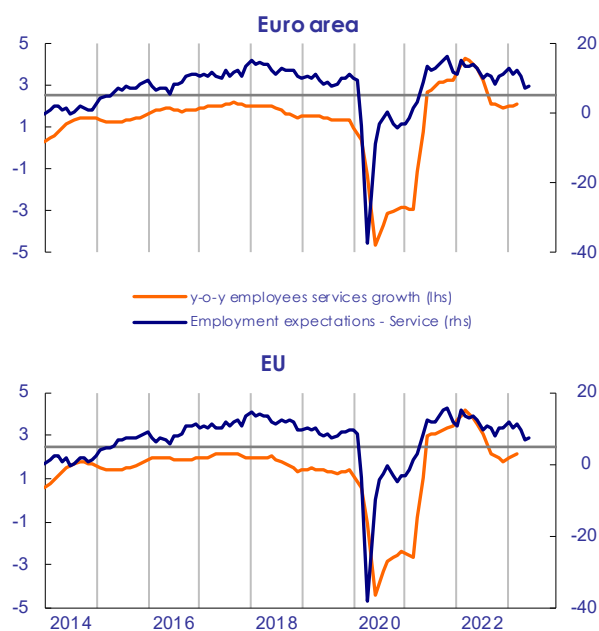
Services confidence remained broadly stable in April and then decreased in the last two months of the quarter. Compared to March, the EU indicator finished the second quarter 2.4 (EU) and 3.2 (EA) points down. In both areas, confidence is now slightly below long-term average again (see Graph 1.1.8).

Looking into the components of services confidence, managers' assessment of **past demand** and their **demand expectations** worsened markedly, while views on the **past business situation** remained virtually unchanged (EU) / improved fractionally (EA).

Employment expectations in services decreased markedly in April and May and recovered fractionally in June, finishing the quarter 4.1 (EU) / 4.8 (EA) points below their March level (see Graph 1.1.9). Managers' **selling price expectations** descended over the whole quarter. Their readings at the end of the second quarter were 8.0 (EU) / 7.4 (EA) points down compared to March, at a level last seen in September 2021. Nevertheless, selling price

expectations in services remain clearly above long-term average.

Graph 1.1.9: Employment expectations in services

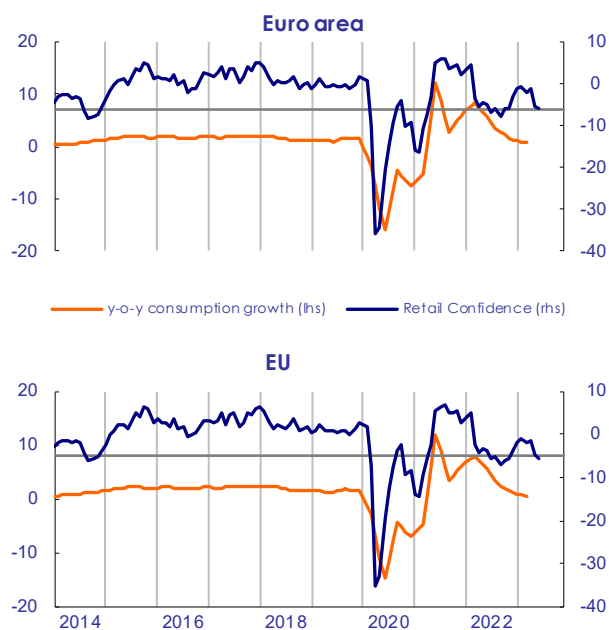


Among the six largest EU economies, services confidence shrunk in Germany (-5.3) and the Netherlands (-3.4) and, to a lesser extent, in France (-2.2), while it stayed broadly unchanged in Italy (-0.5). By contrast, confidence improved markedly in Poland (+4.3) and Spain (+3.7).

In April compared to January, **capacity utilisation in services** decreased fractionally in both the EU and the euro area (-0.2 percentage points in both areas) to 90.2% and 90.0%, respectively. In both areas, however, the rate remained above its long-term average of 89.1% (EU) and 88.8% (EA).

Due to declines in the last two months of the quarter, **retail trade confidence** ended the second quarter of 2023 well below its March level (-3.5 points in the EU and -4.2 points in the EA). In the EU confidence dropped below its long-term average, while in the EA the indicator is still slightly above it (see Graph 1.1.10).

Graph 1.1.10: Retail Trade Confidence indicator



The fall was mainly due to managers' much more negative assessment of the **past business situation**. Though to a lesser extent, managers' assessment of the **volume of stocks** also worsened, while their expectations on the **future business situation** remained broadly stable.

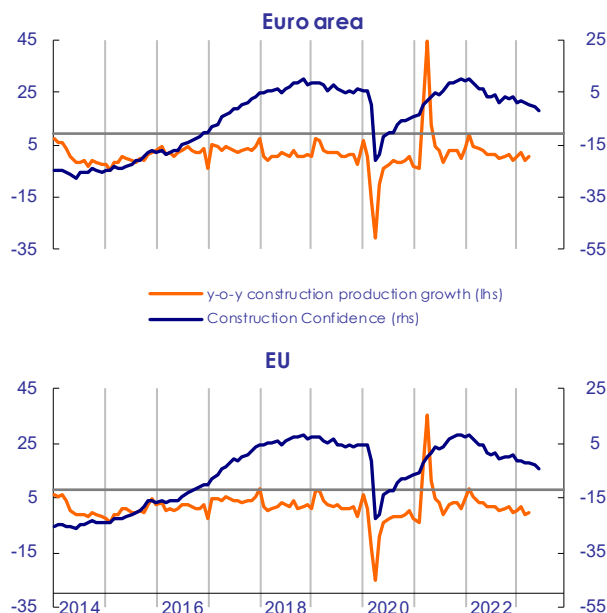
At the level of the six largest EU economies, confidence improved only in the Netherlands (+1.2), while it worsened sharply in Italy (-5.4), Spain (-5.0), France (-3.8) and, to a lesser extent, in Germany and Poland (-1.6 in both cases).

Construction confidence weakened over the second quarter (-2.6 in the EU, -2.9 in the EA), but remained well above its long-term average (see Graph 1.1.11).

In both the EU and the EA, managers' **employment** expectations, and especially their appraisals of **order books** were more downbeat. Regarding order books, the downward trend has continued since March last year.

By the end of the second quarter, the share of construction managers pointing to a **shortage of labour as factor limiting production** continued the downward trend prevailing since September last year in both the EU (-1.9 percentage points compared to March, to 28.0%) and the EA (-2.1 percentage points to 25.3%) but stayed exceptionally high when compared to historical averages. Scarcities also eased further in respect of the availability of **material and/or equipment**. The share of managers identifying them as factors limiting production came down by 6.2 (EU) / 6.8 (EA) percentage points to 10.3 (EU) / 7.5 (EA) %. While remaining at a historically high level, the indicator is now closer to pre-pandemic COVID-19 levels (continued until March 2021) than to the all-time high set in spring 2022.

Graph 1.1.11: Construction Confidence indicator



Among the largest EU economies, construction confidence declined most in Germany (-8.0), Netherlands (-3.0) and France (-2.1), while it improved in Spain (+8.3)³, Italy (+2.6) and Poland (+1.0).

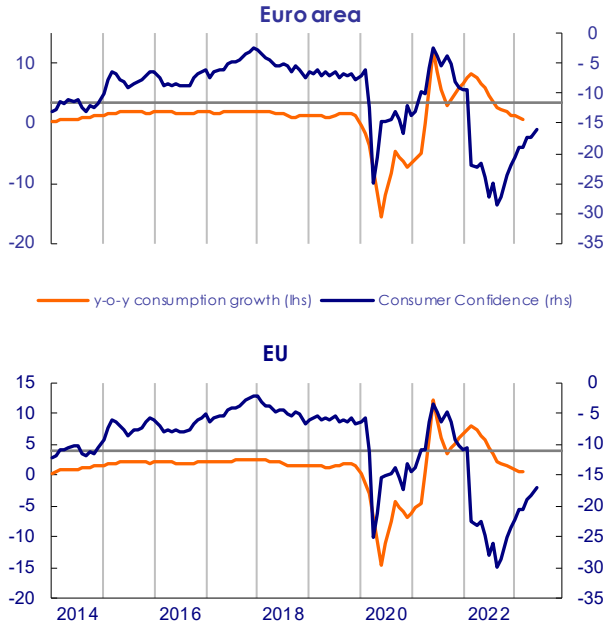
Consumer confidence continued its rebound from the all-time low reached in September 2022. Compared to March, EU/EA consumer

³ The Spanish construction confidence indicator has a comparatively high month-to-month volatility.

confidence was, respectively, 3.4 and 3.0 points higher at the end of the second quarter, but still well below its long-term average (see Graph 1.1.12).

Stronger confidence was thanks to more benign assessments of all components entering the indicator, i.e. **households' future and past financial situation**, their **intentions to make major purchases** and expectations for the **country's general economic situation**. The sharpest improvements were registered in respect of households' future financial situation and the country's expected general economic situation.

Graph 1.1.12: Consumer Confidence indicator



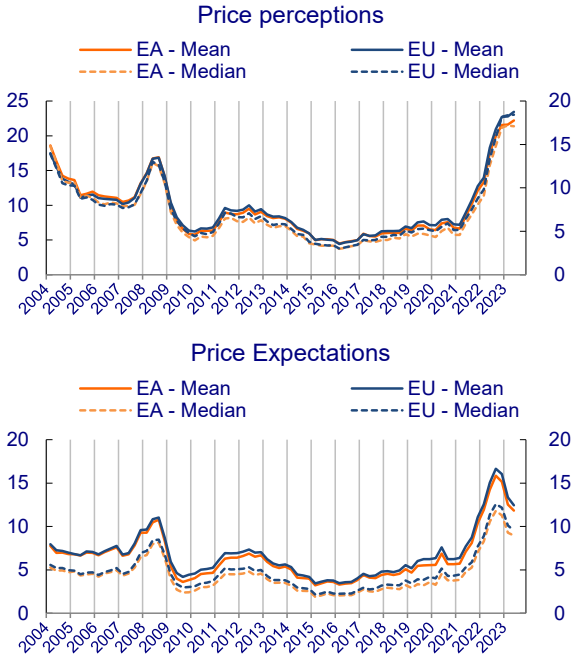
Consumer confidence rallied in Poland (+10.4), Spain (+7.7) and France (+5.8), while it recorded more moderate increases in Germany (+3.4). Confidence stayed (broadly) unchanged in Italy (-0.7), while it decreased in the Netherlands (-1.8).

In the EU and the EA, **consumers' perceptions of price developments** (change over past 12 months, in % change) moderated the steep ascent observed since 2021-Q2. In terms of mean, price perceptions increased marginally over the second quarter reaching a new record high in June. In terms of median, which is less sensitive to the presence of extreme values, the price perceptions remained stable (EU)/decreased marginally (EA) suggesting that the peak has passed. **Quantitative price**

expectations (change over the next 12 months, in %) declined for the third quarter in a row, both in terms of mean and median. Still, the price expectations remained at extremely high levels by historical standards (see Graph 1.1.13).⁴ The results at total level were mirrored across almost all income, education and age groups, as well as among both men and women.

The detailed results among the different socio-economic breakdowns can be downloaded from the [European Commission's website](#).

Graph 1.1.13: Euro area and EU quantitative consumer price perceptions and expectations



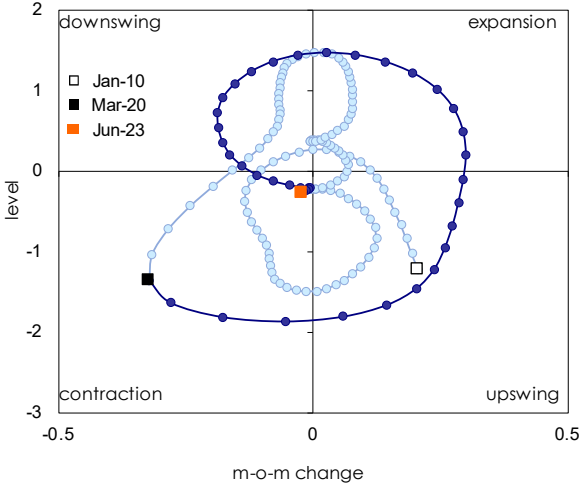
The worsening of economic sentiment in 2023-Q2, as captured by the ESI, also shows in the EU/EA **climate tracers** (see Annex for details). Both have moved away from the border between the contraction and upswing areas and are now more clearly in the contraction zone. (see Graphs 1.1.15 and 1.1.16).

The developments in the sectoral EU/EA confidence indicators reverberated in the sectoral climate tracers (see Graph 1.1.17), both

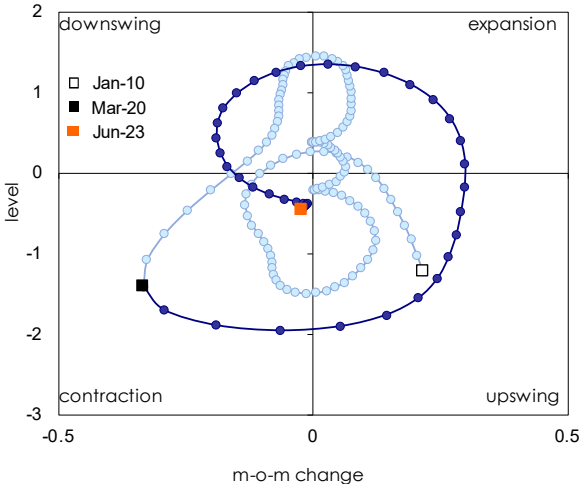
⁴ For more information on the quantitative inflation perceptions and expectations, see the special topic in the [EBCI 2019Q1](#).

in terms of their intensity, as well as the direction of change: the industry tracers moved deeper into the contraction area, the services tracers entered the contraction quadrant (EU) or are on the border with it (EA). The retail trade tracers are still in the expansion quadrant but are approaching the downswing area, while the consumer tracers are in the upswing area pointing the expansion border. The construction tracers, by contrast, sank a bit lower into the downswing area.

Graph 1.1.15: Euro area Climate Tracer

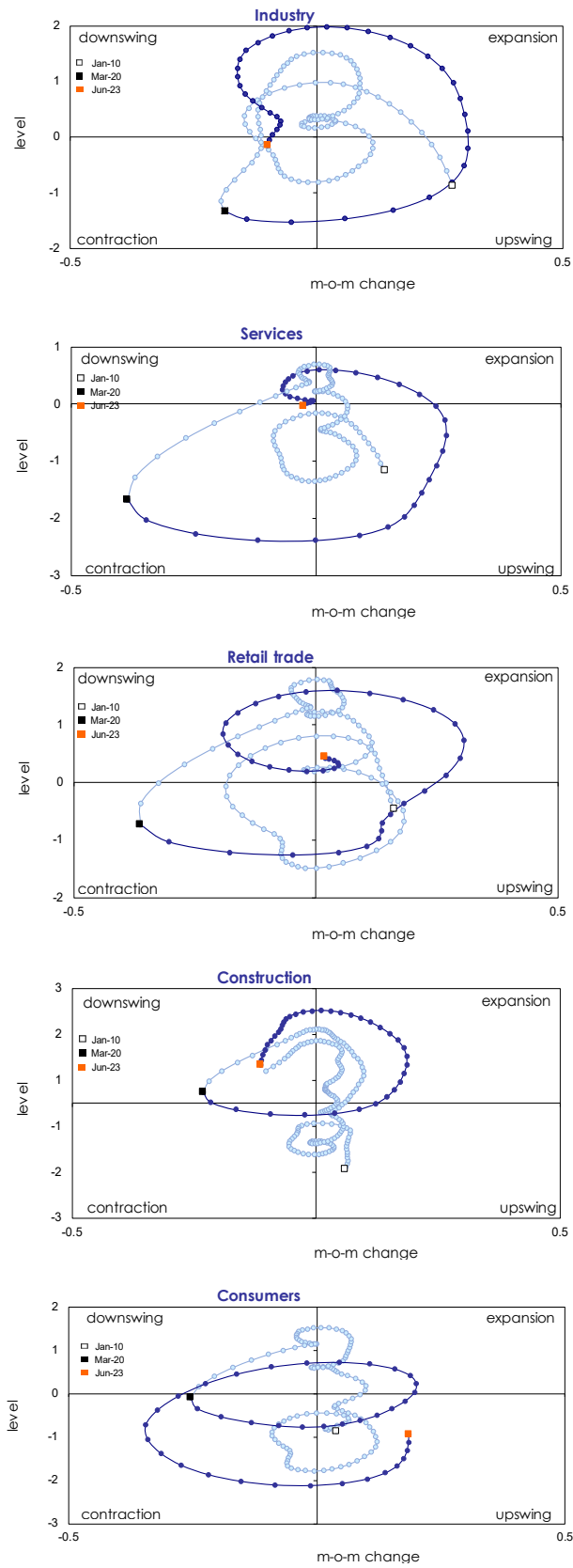


Graph 1.1.16: EU Climate Tracer

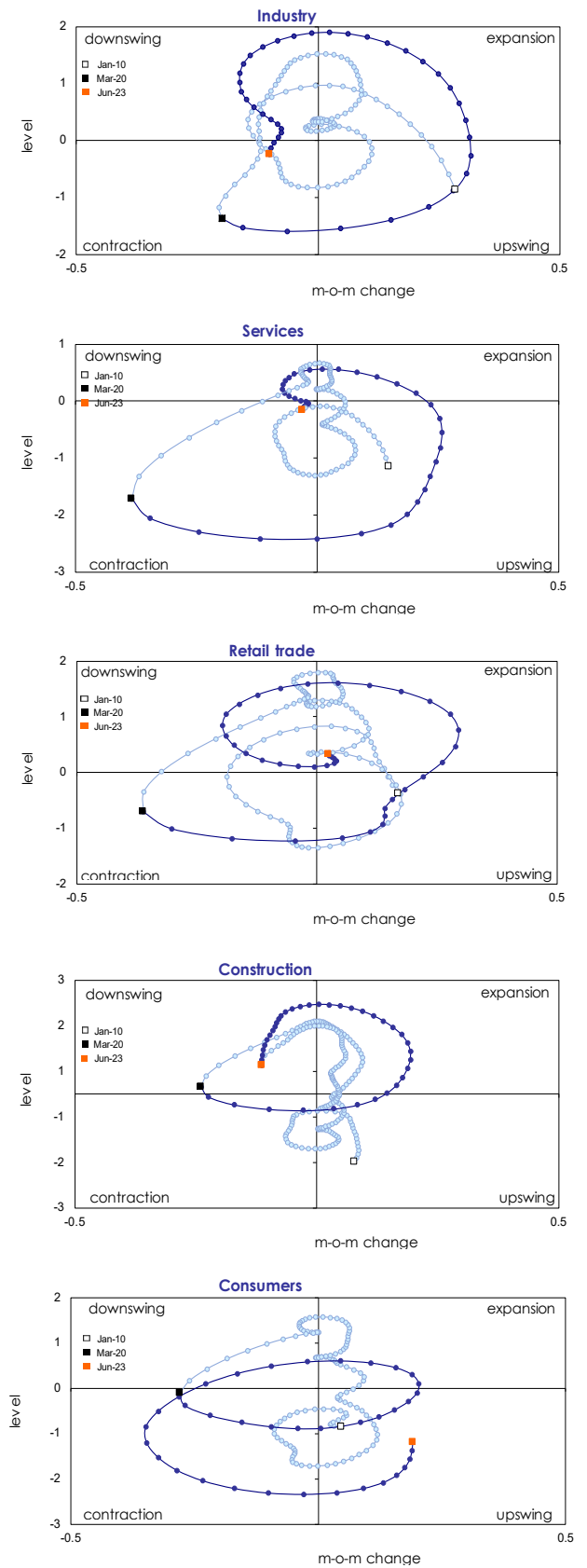


Graph 1.1.17: Economic climate tracers across sectors

Euro area



EU

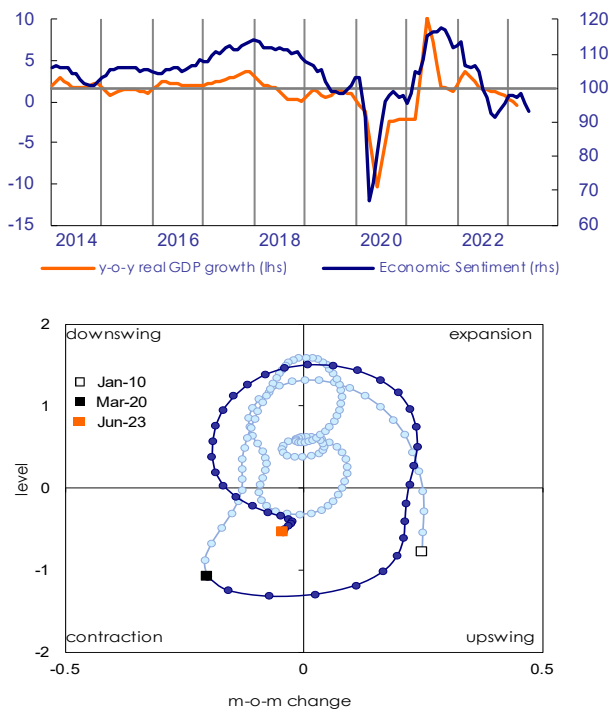


1.2. Selected Member States

After a modest increase in April, the German ESI dropped in May and June, finishing the second quarter 4.1 points below the March readings (see Graph 1.2.1). At 93.4 points, the indicator is now well below its long-term average of 100. Consistently, the German climate tracer moved deeper in the contraction quadrant.

The Employment Expectations Indicator (EEI) worsened over the quarter (-2.7 points compared to March), due to more pessimistic employment plans in services, construction and, particularly, industry, while in retail trade employment plans remained broadly unchanged. The EEI remained nevertheless above its long-term average.

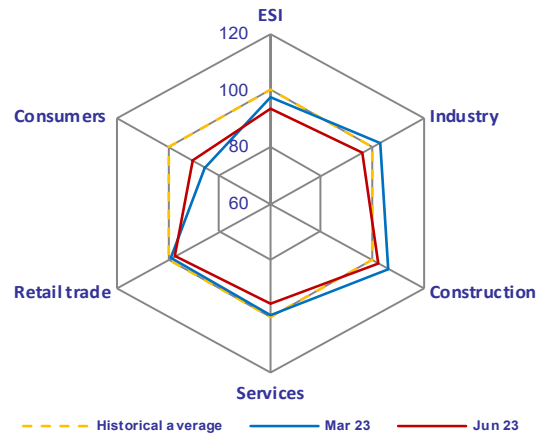
Graph 1.2.1: Economic Sentiment Indicator and Climate Tracer for Germany



As shown in the radar chart (see Graph 1.2.2), confidence improved (markedly) only among German consumers. Confidence in the business sectors, by contrast, took a hit. The deterioration was particularly strong in industry, services, and construction, while in retail trade the decline was milder. The level of confidence was above historical averages only in construction, while in industry, services and

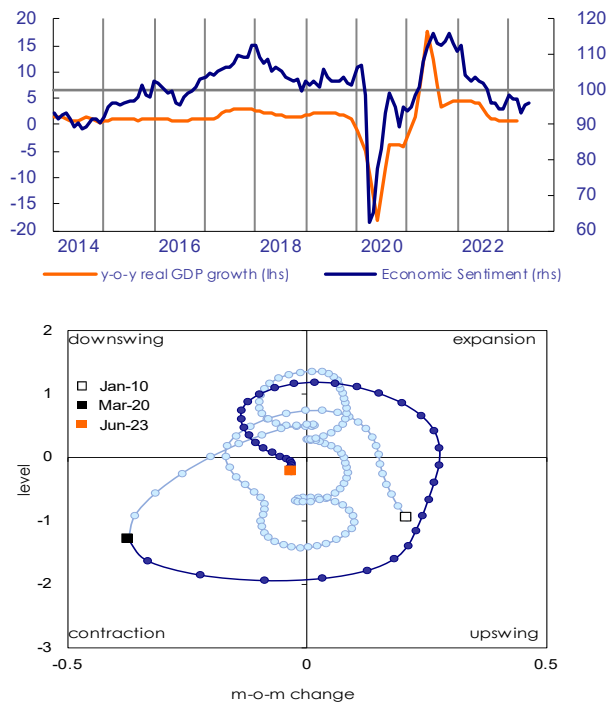
retail trade confidence is now below long-term average. Consumer mood, despite the strong increase, remained exceptionally downbeat.

Graph 1.2.2: Radar Chart for Germany



The **French** ESI declined by 1.1 points compared to March, due to a marked decrease registered in April only partially offset by two increases in a row in May and June. At 96.4 points, the indicator was below its long-term average. The French climate tracer moved from the downswing quadrant into the contraction area (see Graph 1.2.3).

Graph 1.2.3: Economic Sentiment Indicator and Climate Tracer for France

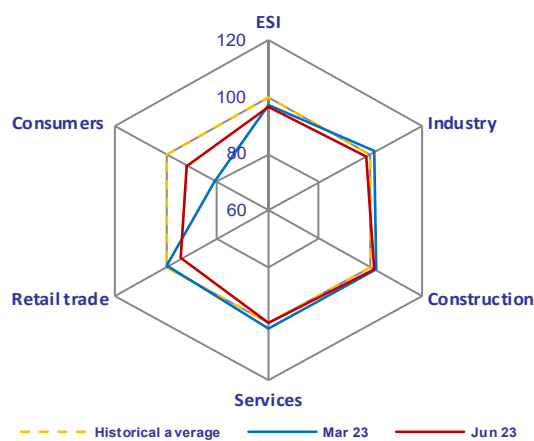


The Employment Expectations Indicator (EEI) decreased strongly (-5.6 points compared to

March), due to worsened employment plans among industry and construction and especially services managers. Employment plans in retail trade stayed virtually flat over the quarter.

As evidenced by the radar chart (see Graph 1.2.4), retail trade confidence deteriorated significantly, while sentiment in all other business sectors saw some smaller decreases. By contrast, consumers' mood improved markedly, but remained well below its long-term average. Among business managers, sentiment is now below historical averages in all sectors, except for construction, where the June reading is slightly above its long-term average.

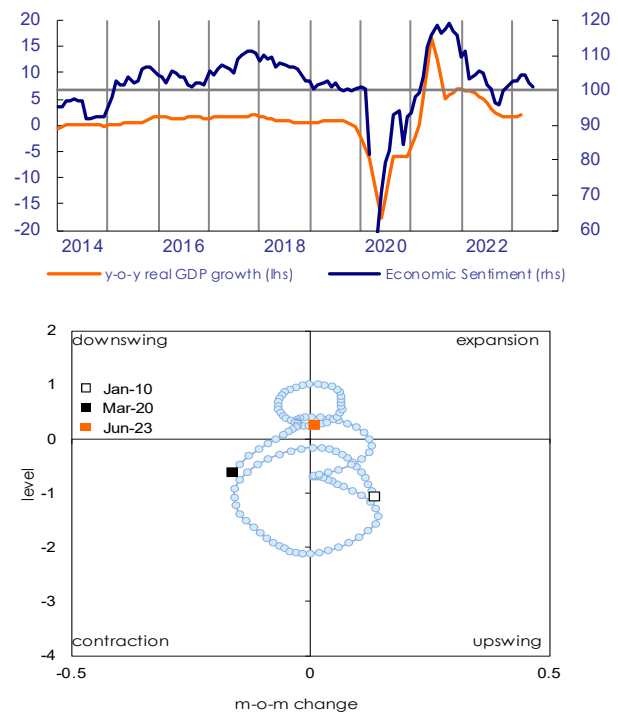
Graph 1.2.4: Radar Chart for France



The **Italian** ESI interrupted the recovery initiated in November last year. Losing 3.2 points compared to March, the indicator remained nevertheless above its long-term average (at a level of 101.2 points). The Italian climate tracer moved back from the expansion quadrant to the intersection between the expansion and downswing areas (see Graph 1.2.5).

The Italian EEI went up and down during the second quarter, ending the quarter one point lower than in March. More optimistic employment plans in retail trade and construction were offset by less optimistic ones in services. Employment expectations in industry stayed broadly stable.

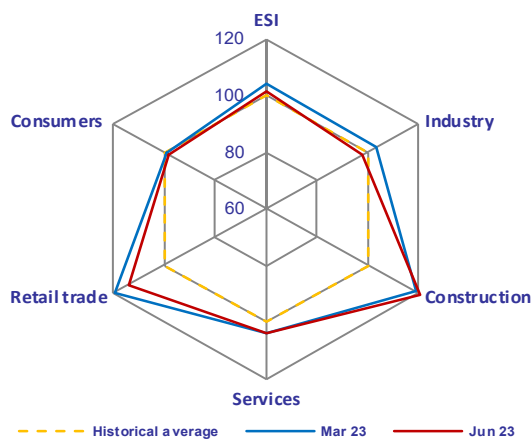
Graph 1.2.5: Economic Sentiment Indicator and Climate Tracer for Italy⁵



As shown in the Italian radar chart (see Graph 1.2.6), confidence decreased strongly in industry and retail trade, while it improved somewhat in construction. Among consumers and in services, confidence remained broadly flat. Except for industry which fell below its long-term average, confidence was well above it in the other surveyed business sectors. Consumer mood in Italy was broadly at an average level by historic standards.

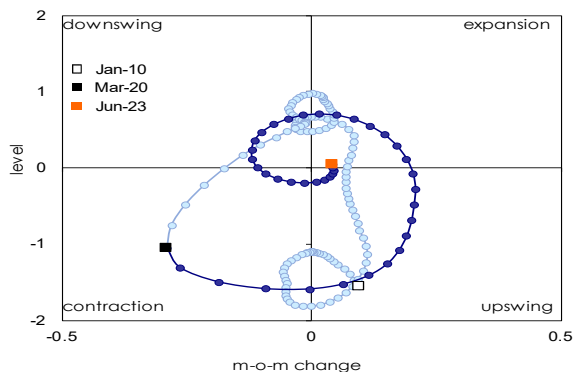
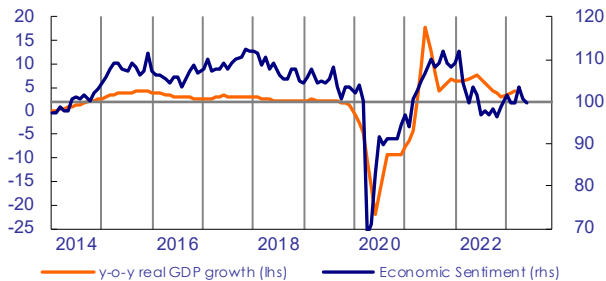
⁵ Due to a missing value for April 2020, the climate tracer for Italy is interrupted between March and May 2020.

Graph 1.2.6: Radar Chart for Italy



The **Spanish** ESI rose and fell during the quarter and finished the second quarter virtually at the same level of the end of last quarter (-0.3 points compared to March). The indicator in March fell just below its long-term average (see Graph 1.2.7). The Spanish climate tracer moved from the upswing quadrant to the intersection between the upswing and expansion areas (see Graph 1.2.7).

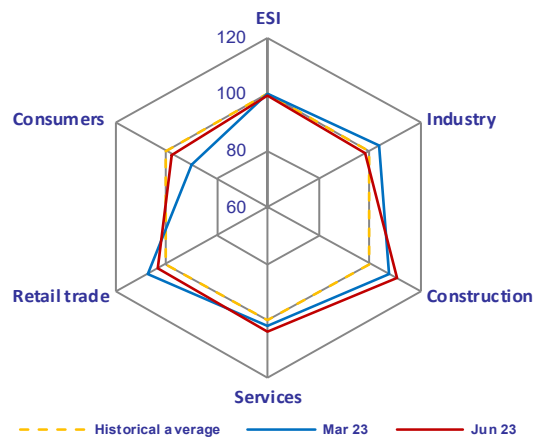
Graph 1.2.7: Economic Sentiment Indicator and Climate Tracer for Spain



The Spanish EEI improved strongly (+3.5 points compared to March), mainly thanks to much more optimistic employment plans among construction managers.⁶ Manager in services and retail were also more optimistic, while in industry employment plans remained broadly flat over the quarter.

As shown in the radar chart (see Graph 1.2.8), confidence improved strongly among consumers and in construction and, to a lesser extent, in services, while it clouded over in industry and retail trade. Confidence is now just below its long-term average in industry and among consumers, while in services, retail trade and construction it exceeded historical averages.

Graph 1.2.8: Radar Chart for Spain

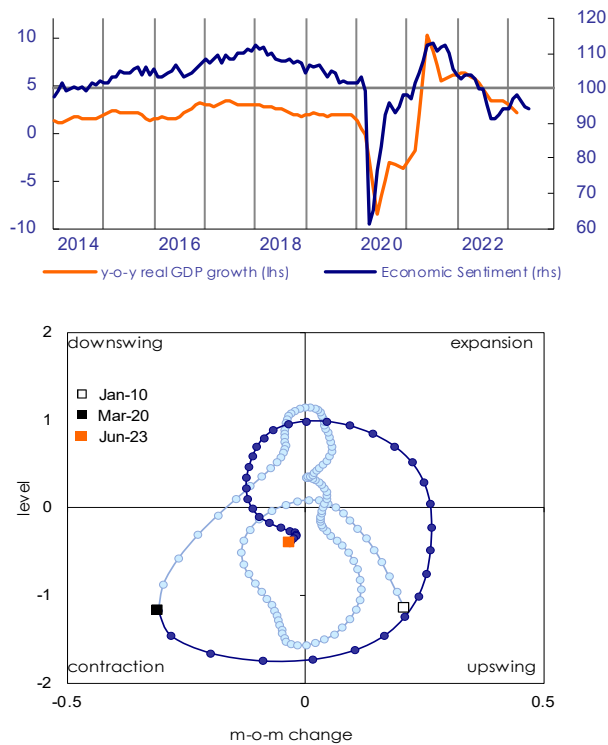


The ESI for the **Netherlands** interrupted the recovery started in November last year, falling by 4.0 points compared to March. At 93.9 points, the ESI is well below its long-term average of 100.

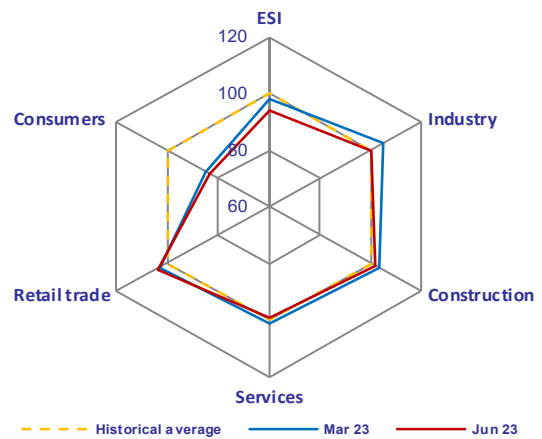
The climate tracer for the Dutch economy moved deeper in the contraction area (see Graph 1.2.9).

⁶ The Spanish employment expectations indicator has a comparatively high month-to-month volatility.

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

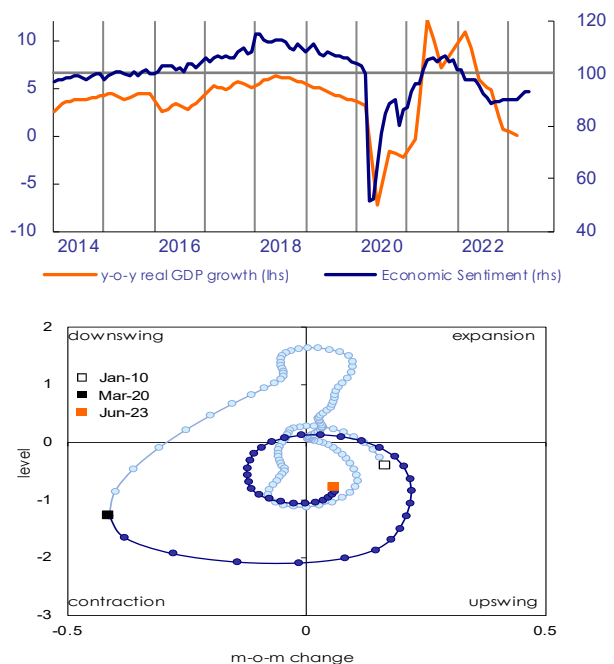


Graph 1.2.10: Radar Chart for the Netherlands



The ESI for **Poland** completed the second quarter of 2023 slightly above its March readings (+2.9 points). At 93.3 points, the indicator remained well below its long-term average. The Polish climate tracer was in the upswing quadrant, pointing to the expansion area (see Graph 1.2.11).

Graph 1.2.11: Economic Sentiment Indicator and Climate Tracer for Poland



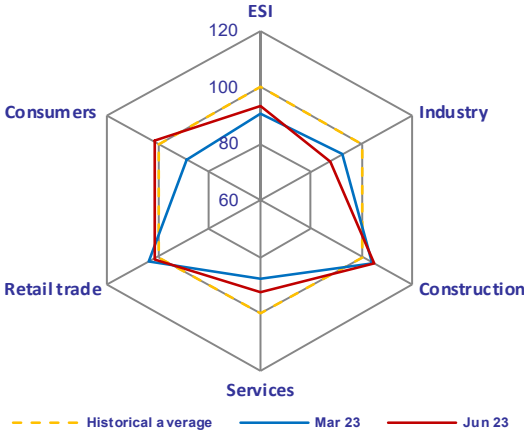
The ESI for the Netherlands decreased throughout the second quarter and ended the second quarter 5.2 points lower than in March. Employment plans worsened drastically in services, and, though to a lesser extent, in building and industry. Employment expectations in retail trade stayed broadly stable.

As shown in the radar chart (see Graph 1.2.10), except for retail trade, which registered a small improvement, confidence worsened in the other surveyed business sectors and among consumers. The level of confidence is particularly low among consumers. While falling just below its long-term average in industry and services, confidence remained above in retail trade and construction.

After flat developments in April and May, the Polish EEI registered a solid decrease in June, and finished the second quarter 2.5 points below its March level. The deterioration reflected much more pessimistic employment plans in all business sectors except for construction, where managers employment expectations improved compared to March.

As shown in the radar chart (see Graph 1.2.12), confidence firmed among consumers, lifting confidence above its long-term average. Confidence improved markedly also in services and less so in construction. By contrast, in industry and retail trade confidence worsened. Sentiment was far below historical averages in industry and services, while it was above in retail trade and especially in construction.

Graph 1.2.12: Radar Chart for Poland



2. A NEW SURVEY-BASED LABOUR HOARDING INDICATOR

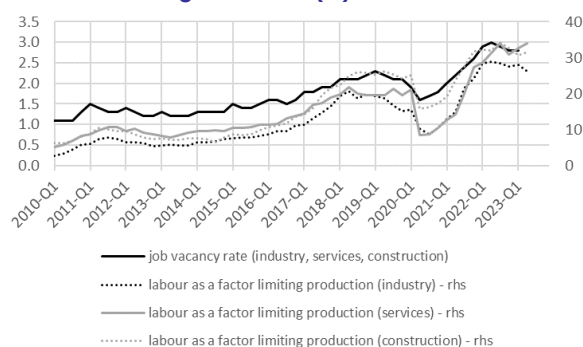
Introduction

What is labour hoarding, how is it measured and why is it important for economists and policy makers? The European Commission has developed a new labour hoarding indicator based on its Joint Harmonised EU Programme of Business and Consumer Surveys (EU BCS) with the aim to more accurately track labour market performance over the cycle. This Special Topic explains how the new indicator works, discusses where it could be used and shows how it performed during recent business cycle episodes.

Labour hoarding can be defined as “that part of labour input which is not fully utilised by a company during its production process at any given point in time” (ECB, 2003). Typically, labour hoarding, implying under-utilisation of the workforce, occurs in periods of slack or downturn in economic activity. The rationale for companies not to lay off (redundant) employees in such periods is that (i) dismissing workers usually involves costs, e.g. severance payments, and (ii) recruiting workers once economic activity recovers also entails costs (screening the labour market for candidates, training them, etc.).

The use of labour hoarding in economic downturns has increased over time. A secular increase in labour market tightness is likely to have increased the recruitment costs for companies and, hence, reinforced the case for labour hoarding. As shown in Graph 2.1, the EU job vacancy rate (i.e. the proportion of total posts that are vacant) almost tripled from 1.1% in 2010-q1 to 3.0% in 2022-q2. Similarly, the share of business managers reporting shortage of labour as a factor limiting their production/business activity has increased, reaching all-time highs in 2022.

Graph 2.1: EU Job Vacancy Rate and Shortage of Labour as a Factor Limiting Production (%)



Note: The time-series on factors limiting production refer to the percentage of firms reporting shortage of labour as a factor limiting their production/business activity in the business surveys of the BCS programme. In the case of construction, the reported scores are quarterly averages of the monthly survey results.

The use of short-time working (STW) schemes increased significantly in response to the COVID-19 pandemic crisis. STW schemes are “public programmes that allow firms experiencing economic difficulties to temporarily reduce the hours worked while providing their employees with income support from the State for the hours not worked” (European Commission, 2020). At the onset of the Great Financial Crisis (GFC), only eleven EU Member States had STW programmes in place, with the number increasing to twenty in the further course of the crisis. By contrast, during the COVID-19 pandemic crisis, virtually all EU Member States massively resorted to some sort of job retention scheme, also thanks to the support provided by the EU financial assistance facility to help Member States in their fight to preserve employment (SURE Programme)⁷(CEPS, 2023).

Monitoring the extent of labour hoarding in an economy is important for a variety of reasons. Accounting for labour hoarding allows to

⁷ SURE: European instrument for temporary support to mitigate unemployment risks in an emergency following the COVID-19 outbreak.

estimate with more precision the contribution of labour to production and better understand the cyclical variation of labour productivity. Furthermore, as firms hoarding labour might increase their output in economic upturns without having to recruit new staff, labour hoarding can help contain wage pressures ([Bank of England, 2003](#)). It is thus a factor relevant for the conduct of monetary policy ([ECB, 2021a](#)).

There are no direct (statistical) measures of labour hoarding, but only ‘proxies’. The most frequently used are labour productivity per person, i.e. output per head, and average hours worked per worker. The disadvantage of both is that they are not purely cyclical indicators. Labour productivity is an imperfect measure of labour utilisation as it also reflects changes in the capital stock (and its utilisation), the rate of technological progress and the skill composition of the labour force. Labour productivity can also be affected by factors such as the degree of competition in the final goods market, and the quality and composition of the labour force. Hours worked per worker follow a structural downward trend which reflects, inter alia, a growing share of part-time work ([ECB, 2021a](#)).

The Commission's new labour hoarding indicator

The European Commission has developed a new labour hoarding indicator based on its Joint Harmonised EU Programme of Business and Consumer Surveys (BCS).⁸ The new labour hoarding indicator – LHI from now on - combines the answers of managers to two *existing* survey questions, namely regarding their expectations with respect to employment and output. The idea is that labour hoarding occurs when firms expect their output to decrease, but their employment to remain stable or even increase. Box 2.1 explains in detail how the indicator is constructed. A main advantage of constructing the indicator based on existing BCS

variables instead of introducing a new dedicated survey question is that the former allows to build time-series from the available historical (micro-) data, and the plausibility of the indicator can be assessed against past economic developments.

The new labour hoarding indicator could be used to refine the estimation of potential growth and output gaps according to the European Union's Commonly Agreed Methodology (EU-CAM).⁹ The concepts of potential growth and the output gap form a crucial part of the European Commission's toolkit for assessing the cyclical position of the economy and its productive capacity. The labour hoarding indicator could be used to inform three crucial elements of the EUCAM estimates, namely: (1) structural unemployment and the Non-Accelerating Wage Rate of Unemployment (the NAWRU); (2) capacity utilisation and trend total factor productivity (TFP); and (3) trend average hours worked. A decision as to whether a change to the EU-CAM to include the labour hoarding indicator is warranted or not will be taken after a thorough analysis which is currently on-going.

⁸ In the framework of the EU BCS Programme monthly surveys are conducted among consumers, as well as managers in the manufacturing industry, services, retail trade and construction sectors. The country coverage includes all 27 EU Member States, as well as five of the candidate countries (Albania, Montenegro, Republic of North Macedonia, Serbia and Turkey).

⁹ For a detailed description of the Ecofin Council-approved production function (PF) methodology see [European Commission, 2014](#).

Box 2.1: Construction method of the new Labour Hoarding Indicator (LHI)

The construction of the LHI is based on a survey question capturing managers' employment expectations and a question on their output expectations.

The formulation of the employment question used is identical across all business surveys: "*How do you expect your firm's total employment to change over the next 3 months? It will... + increase, = remain unchanged, - decrease*".

Regarding managers' output expectations, questions differ slightly across the four business surveys. Namely, they refer to expectations of production in the industry survey, of change in demand (turnover) in the services survey and of change in business activity (sales) for retail trade. The answer options are broadly the same in the three questions: *+increase/improve, =remain unchanged and -decrease/deteriorate*. In the construction survey, the question used is the one asking managers to assess the level of their current overall order books (answer options: *+more than sufficient (above normal), =sufficient (normal for the season), -not sufficient (below normal)*)¹.

The construction of the LHI involves several steps. First, the reported expectations of each surveyed firm with respect to output and employment are compared so as to categorise the firm in line with the scheme presented in Table 1, as hoarding labour (= value 1) or not (= value 0).

Table 1: Answer combinations leading to firm-level labour hoarding indicator taking value 1

surveyed sector	Answer to question on expected...	
	...output	...employment
industry	- decrease	+ increase or = remain unchanged
services		
retail trade	- deteriorate (decrease)	
construction	- not sufficient (below normal)	

Note: All other answering combinations lead to the firm-level labour hoarding indicator taking value 0.

Subsequently, the resulting binary values for the individual firms are aggregated for a given country and sector (e.g. Belgium industry) using the weighting scheme that is used for aggregating the results of the harmonised question on employment expectations. While that scheme can slightly vary across countries, depending on country specificities and data availability, it is usually based on the number of employees for the first stage (within branches) and sectoral value added for higher aggregates. The resulting value reflects the (weighted) percentage of firms that hoard labour in a specific country and in each of the four sectors.

These country- and sector-specific LHIs are subsequently aggregated to form the following three headline LHIs:

- for each country, an aggregate LHI capturing the prevalence of labour hoarding in the entire economy is constructed as the weighted average² of the sector-specific LHIs,
- at EU and euro-area (EA) level, sector-specific LHIs (e.g. EU industry, EA services, etc.) are calculated as the weighted average³ of the country-specific sectoral LHIs,
- at EU and EA level, an aggregate LHI is constructed as the weighted average⁴ of the EU/EA sectoral LHIs defined in the previous bullet.

In a last step, all of the above LHIs are seasonally adjusted.

¹ In the construction survey, there is no question on output expectations. However, current order books can be seen to reflect, to a significant extent, future construction output. The national questionnaires for France and Italy include an explicit question on orders/construction plans (Italy) and activity (France) over the next three months. The labour hoarding indicators constructed on the basis of these questions turned out to be broadly similar to the indicator using the assessment of current order books.

² The weights used are the same as those used for the construction of the Commission's Employment Expectations Indicator, reflecting, for every sector, the share of its employment in total employment across the four sectors.

³ The weights used reflect, for the sector concerned, the share of a given country in EU or EA gross value added.

⁴ The weights used are the same ones as those defined in footnote 2, except that they are calculated at EU/EA, rather than at national level.

Availability of the new labour hoarding indicators

As from May 2023, the new LHIs are part of the EU BCS Programme. They are calculated at monthly frequency for all countries covered by the programme. In line with the regular survey data generated by the programme, the results are not only available for each of the four business sectors, but also for sub-sectors, along the European Community's statistical classification of economic activities (NACE Rev.2). For industry, the results are also provided by four Main Industrial Groupings, namely intermediate goods, capital goods, consumer durables and non-durables, as well as by overall consumer goods and the food and beverages industry.

For the period prior to May 2023, the LHIs are only available for the main aggregates and with different country coverage. The availability of the country and sector-specific time series determines the length of the EU/EA LHI series, the rule being that an EU/EA aggregate for a given sector is only constructed when the countries for which data is available represent at least 50% of the sector's EU/EA-wide gross value added. Aggregate EU/EA LHIs are only constructed as of the month in which EU/EA aggregates for all four sectors covered by the programme are available. Table 2.1 summarises the historic data availability by country and sector.

Table 2.1: Starting dates of historic LHI time-series¹⁰

	industry	services	retail trade	construction	cross-sector
Belgium	2008/5	1994/6	1985/3	1982/2	2008/5
Bulgaria	2001/1	2002/5	2001/1	2001/1	2002/5
Czechia	2003/1	2003/1	2003/1	2003/1	2003/1
Denmark	1998/1	2000/4	2011/5	2003/5	2011/5
Germany	1991/1	2005/1	1997/4	1991/1	2005/1
Estonia					
Ireland					
Greece	1985/2	1997/7	1993/4	1990/10	1997/7

¹⁰ The availability of historic data might still change in the future, as efforts are currently undertaken to extend the historic time-series further backwards.

Spain	1993/3	2011/5	2011/5	1993/1	2011/5
France	1990/1	2000/4	2003/1	1990/1	2003/1
Croatia	2008/5	2008/5	2008/5	2008/5	2008/5
Italy	1991/3	2003/1	2003/1	2000/1	2003/1
Cyprus					
Latvia	2010/1	2010/1	2010/1	2010/1	2010/1
Lithuania					
Luxembourg					
Hungary	1996/1	1999/1	1996/1	1996/2	1999/1
Malta					
Netherlands	2014/1	2014/1	2014/1		
Austria	1997/1	1997/1	2008/5	1997/1	2008/5
Poland	2000/1	2003/1	2000/1	2000/1	2003/1
Portugal	2006/7	2001/4	2006/5	2003/2	2006/7
Romania					
Slovenia	1995/4	2002/4	1999/1	2002/3	2002/4
Slovakia	2002/1	2002/1	2002/1	2002/1	2002/1
Finland	1980/3	2004/1	2007/1	1980/3	2007/1
Sweden	2010/5	2000/5	2010/5	2010/5	2010/5
EU	1991/3	2003/1	2003/1	1991/1	2003/1
EA	1991/1	2003/1	2003/1	1991/1	2003/1

Note: No historic data is available for the candidate countries covered by the EU BCS Programme, namely Albania, Montenegro, Republic of North Macedonia, Serbia, Turkey. LHI calculation only started in May 2023.

The LHIs will only be published once the needed quality checks are completed. Quality controls include assessing how the new data relates to the historic data (are there structural breaks and/or indications of changes in trends?) and, for countries that did not provide any historic data, to check whether the data submitted as of May 2023 appear plausible from a cross-country perspective. The Commission intends to start the monthly publication of the LHI results (including, if available, the historic scores) upon completion of this analysis, by the end of the year.

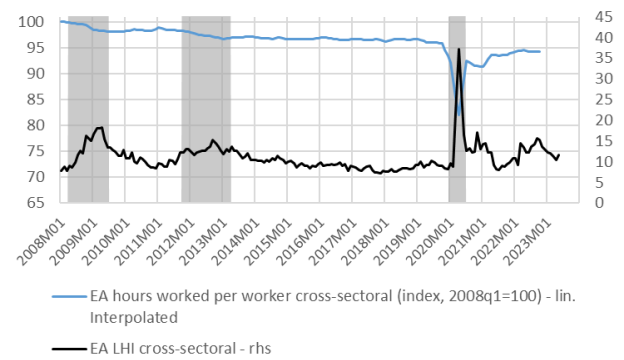
The quality of the new labour hoarding indicators

The plausibility of the new LHIs can be assessed in the light of economic developments.

Graph 2.2 plots the aggregate EA¹¹ LHI against the backdrop of the economic cycle (with recessions highlighted as grey shaded areas) and alongside hours worked per worker. As expected, the LHI peaks in each of the three recessions shown in the graph. The magnitude of the peak is much bigger in the recession caused by the COVID-19 pandemic than in the preceding two recessions, which is plausible in the light of the sharper contraction of GDP and the more widespread use of state-subsidised STW schemes¹² during the pandemic.

The evolution of the LHI also tallies with that of hours worked per worker. In particular, as hours worked rebound sharply from their COVID-19 trough, the LHI plummets. A comparison of the two indicators also highlights a distinguishing feature of the LHI, namely its purely cyclical nature, with the indicator, after each peak, sinking back to its pre-crisis level. This makes its interpretation easier than for the average hours worked variable, which is driven by both cyclical developments (=labour utilisation) and structural ones (downward trend due to growing share of part-time work, etc.). As shown in Graph 2.2, every recession results in a permanent decline in average hours worked and whether (and at what point in time) recession-induced labour hoarding can be assumed to have stopped depends crucially on how the long-term trend is specified.

Graph 2.2: EA (cross-sectoral) Labour Hoarding Indicator (LHI) and hours worked per worker



Note: The shaded areas represent recessions in the euro area as defined by the Euro Area Business Cycle Dating Committee. The Eurostat national accounts dataset contains information on total employment and total hours worked. Hours worked per worker are obtained by dividing total hours worked by total employment.

The LHI also produces plausible results at sectoral level. As shown in Graphs 2.3 to 2.5, the industry, services and retail trade LHIs (i) peak in all three recessions, as average hours worked decline, (ii) reach unprecedented levels during the pandemic and (iii) have a cyclical pattern whereby the indicator, after each peak, eventually eases back to pre-crisis levels. In the case of industry and services, the sectoral LHI can be shown to co-move (negatively) with the EU BCS-based capacity utilisation indicators¹³ (correlations¹⁴ of -0.61 in industry and -0.53 services). As the capacity utilisation indicators are essentially cyclical indicators of under-utilisation of all production factors, they should, *inter alia*, capture episodes of labour hoarding. The inverse relationship therefore provides additional reassurance that the new indicators properly work as gauges of labour hoarding, and that they are essentially cyclical indicators.

Zooming in on the pandemic crisis, the sectoral LHIs suggest that the industrial sector stopped hoarding labour much earlier than services and retail trade. This is consistent with the available evidence on cross-sectoral

¹¹ The graphs shown in this section refer to the EA, instead of the EU, as there are no official recession dates for the latter. The correlation between the EA and EU LHIs is very high so that all observations relating to the EA LHIs also hold for the EU indicators.

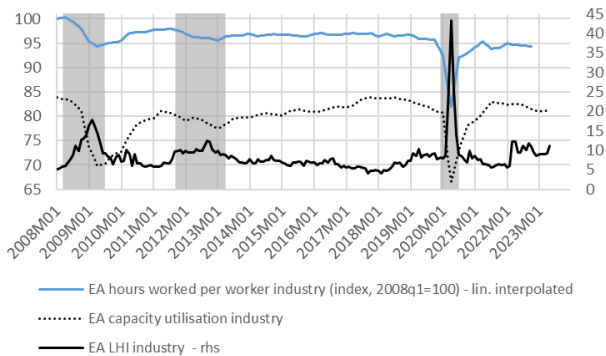
¹² According to the [ECB \(2020\)](#), in April 2020, "15% of all employees in Germany, 34% in France, 30% in Italy and 21% in Spain were on short-time work", while, in 2009, "the average share of employees participating in short-time work schemes reached 3.2% in Germany, 0.8% in France, 3.3% in Italy and 1.0% in Spain".

¹³ The underlying survey question in the industry survey is: "At what capacity is your company currently operating (as a percentage of full capacity)? The company is currently operating at ...% of full capacity". The corresponding question in the services survey reads: "If the demand expanded, could you increase your volume of activity with your present resources? Yes - No. If so, by how much? ...%".

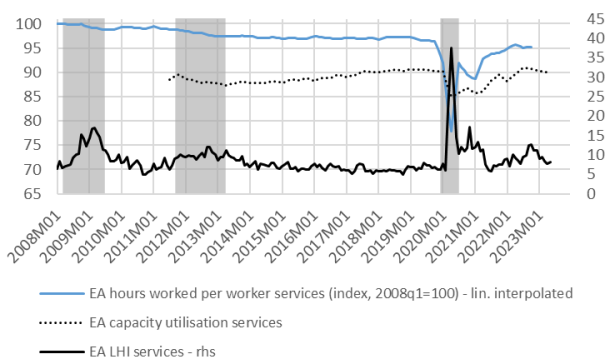
¹⁴ The period considered is 2008/1-2023/4 (for industry) and 2011/7-2023/4 (for services).

differences in the impact of the pandemic-induced containment measures on output, which holds that non-teleworkable, contact-intensive activities were particularly affected by the measures throughout the pandemic (see e.g. [ECB, 2021b](#)).

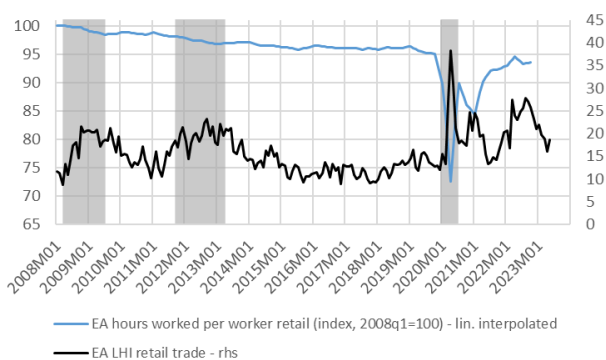
Graph 2.3: EA Industry Labour Hoarding Indicator (LHI), hours worked per worker and capacity utilisation



Graph 2.4: EA Services Labour Hoarding Indicator (LHI), hours worked per worker and capacity utilisation



Graph 2.5: EA Retail Trade Labour Hoarding Indicator (LHI), hours worked per worker

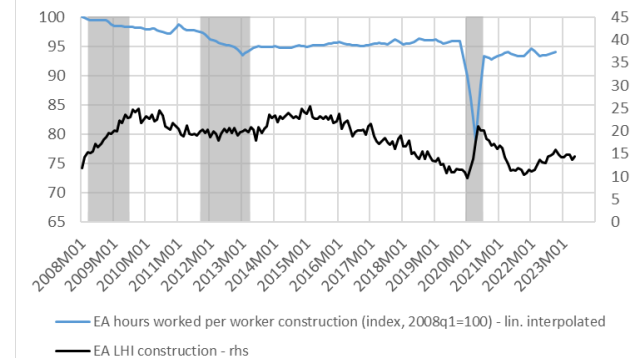


Note: The Eurostat national accounts dataset contains information on total employment and total hours worked. Hours worked per worker are obtained by dividing total hours worked by total employment.

In the aftermath of the GFC, labour hoarding was especially used in the construction sector. After a strong rise in response to the GFC, the construction LHI does not gradually ease back to its pre-crisis level, but remains at an elevated level for a number of years (see Graph 2.6). The

reason for this is that the GFC triggered a construction crisis which dragged on for many years: starting in 2008, production in construction saw a constant decline until the beginning of 2013, followed by two years of flat developments. The recovery of the sector started only as of 2016, which coincides with the point from which onwards the LHI decreases.

Graph 2.6: EA Construction Labour Hoarding Indicator (LHI), hours worked per worker



The LHIs also appear plausible at the level of individual countries. As shown in the Annex to Section 2, the cross-sectoral national LHIs have a similar pattern as the above-discussed EA-version of the indicator, displaying a clear reaction to the GFC and reaching historic highs during the pandemic. When it comes to the sovereign debt crisis, in 2011-13, there is some variety in the reaction of country-LHIs (with several LHIs showing no major reaction at all). This finding is intuitive in so far as the sovereign debt crisis, contrary to the GFC and COVID-19 crisis, affected the EU Member States to very different degrees.

As a result of the above developments, the country LHIs are inversely related to year-on-year GDP growth. This is displayed in the graphs in Annex¹⁵ and in Table 2.2, showing the correlations between the country-specific LHIs and year-on-year GDP-growth. Indeed, for all

¹⁵ Contrary to the analysis of the LHIs at EU/EA level, we use GDP growth as a benchmark series at country level. The reason is that hours worked per worker can be subject to idiosyncratic shocks which are not indicative of labour hoarding (changes in working time regulations, such as the introduction of the 35-hour week in France, changes in the taxation system incentivising part-time work, etc.). While the effect of these national regulatory changes is muted at EU/EA level, it can have a significant impact at country-level.

available countries, except for Sweden, the correlation coefficients are meaningful, with most of them in the range of -0.5 to -0.8. Importantly, the significant correlations are not solely driven by the sharp decline and rebound of GDP during the pandemic, which is generally matched by a commensurate spike and fall of the LHIs: when comparing the correlations calculated over the full available sample (white cells in the table) to the correlations reflecting a sample excluding the pandemic (grey cells), the latter tend to be even higher.

Table 2.2: Correlations between cross-sectoral Labour Hoarding Indicator and GDP (y-o-y,%)

Belgium	5/2008-3/2023	-0.41
	5/2008-12/2019	-0.47
Bulgaria	5/2002-3/2023	-0.54
	5/2002-12/2019	-0.63
Czechia	1/2003-3/2023	-0.61
	1/2003-12/2019	-0.62
Denmark	5/2011-3/2023	-0.51
	5/2011-12/2019	-0.58
Germany	1/2005-3/2023	-0.62
	1/2005-12/2019	-0.75
Greece	7/1997-3/2023	-0.63
	7/1997-12/2019	-0.66
Spain	5/2011-3/2023	-0.74
	5/2011-12/2019	-0.84
France	1/2003-3/2023	-0.56
	1/2003-12/2019	-0.77
Croatia	5/2008-3/2023	-0.58
	5/2008-12/2019	-0.84
Italy	1/2003-3/2023	-0.62
	1/2003-12/2019	-0.66
Latvia	1/2010-3/2023	-0.55
	1/2010-12/2019	-0.61
Hungary	3/1999-3/2023	-0.73
	3/1999-12/2019	-0.85
Austria	5/2008-3/2023	-0.59
	5/2008-12/2019	-0.69
Poland	1/2003-3/2023	-0.47
	1/2003-12/2019	-0.34
Portugal	7/2006-3/2023	-0.68
	7/2006-12/2019	-0.71
Slovenia	4/2002-3/2023	-0.66
	4/2002-12/2019	-0.85
Slovakia	1/2002-3/2023	-0.60
	1/2002-12/2019	-0.56

Finland	1/2007-3/2023	-0.49
	1/2007-12/2019	-0.47
Sweden	5/2010-3/2023	-0.11
	5/2010-12/2019	0.14

Conclusions

Labour hoarding has become an increasingly important phenomenon to understand labour market outcomes.

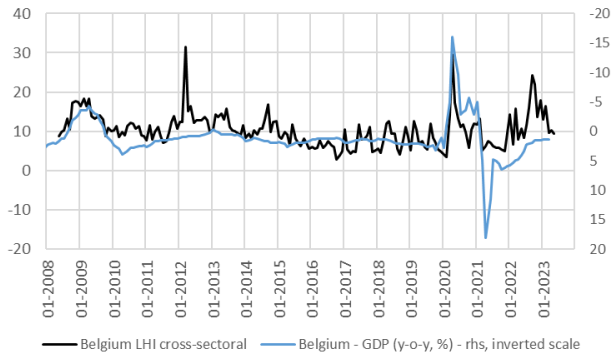
The European Commission has developed a new labour hoarding indicator (LHI), derived from data generated by its Joint Harmonised EU Programme of Business and Consumer Surveys (EU BCS). The indicator measures the percentage of companies participating in the monthly business surveys which expect their output to decrease, but their employment to remain stable or increase. Profiting from the wide coverage of the EU BCS Programme, the LHI can be constructed for the EU, euro area and individual Member States, as a sector-specific (industry, services, retail trade, construction), as well as an economy-wide indicator.

For various country-sector combinations, the LHI displays plausible developments. At EA-level, the sector-specific, as well as the economy-wide LHI peak in each of the last three recessions and most so during the COVID-19 pandemic, which is plausible in the light of the particularly sharp GDP contraction and the wide-spread use of short-time working schemes. The LHI clearly emerges as a purely cyclical indicator, as, after each peak, it eventually eases back to pre-crisis levels. This allows for an easier interpretation than alternative ‘proxies’ of labour hoarding, like average hours worked, which partially reflect structural trends. The evolution of the LHI is also plausible at the level of individual Member States. The cross-sectoral national LHIs co-move negatively with year-on-year GDP growth, as evidenced by correlation coefficients in the range of -0.5 to -0.8 points.

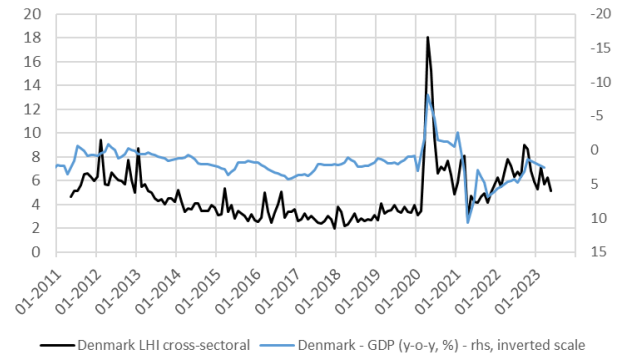
The Commission intends to start publishing the LHI results by the end of the year.

ANNEX TO SECTION 2

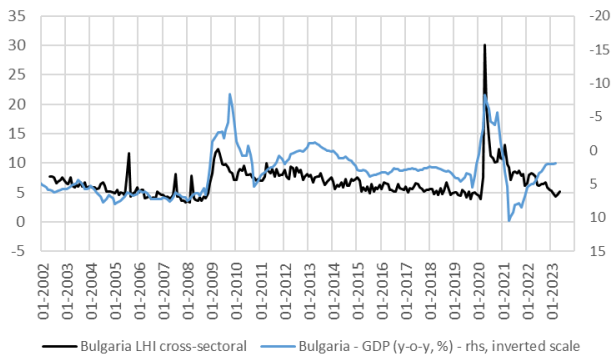
Graph A.1: Belgium Labour Hoarding Indicator (LHI), GDP (y-o-y, %)



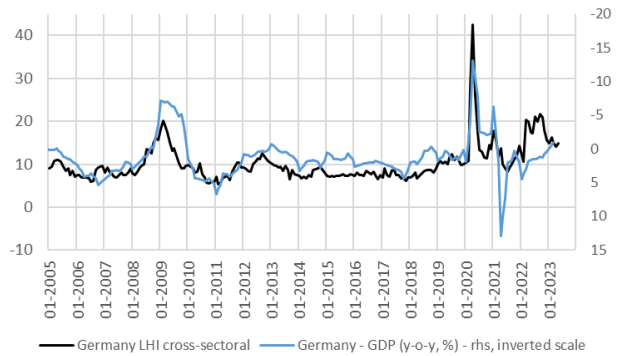
Graph A.4: Denmark Labour Hoarding Indicator (LHI), GDP (y-o-y, %)



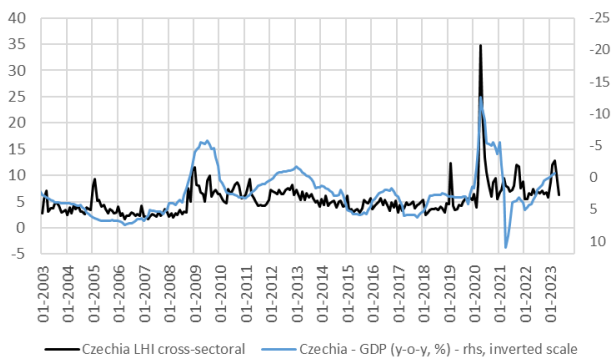
Graph A.2: Bulgaria Labour Hoarding Indicator (LHI), GDP (y-o-y, %)



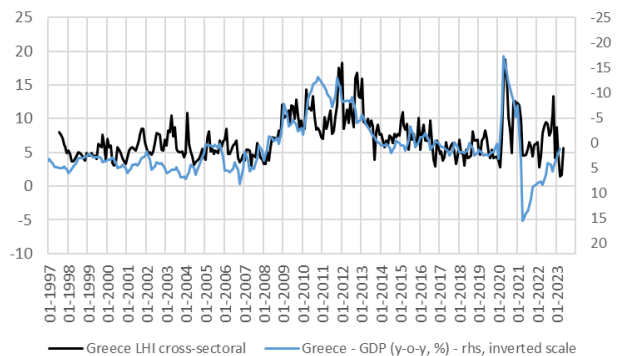
Graph A.5: Germany Labour Hoarding Indicator (LHI), GDP (y-o-y, %)



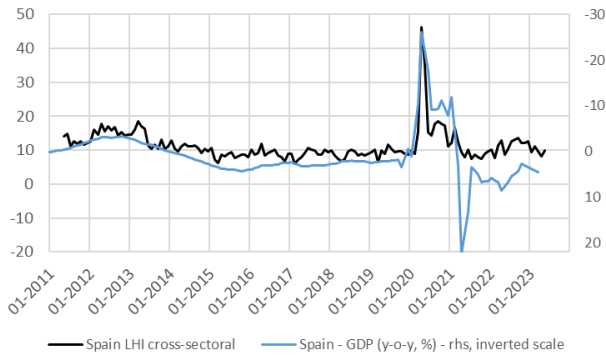
Graph A.3: Czechia Labour Hoarding Indicator (LHI), GDP (y-o-y, %)



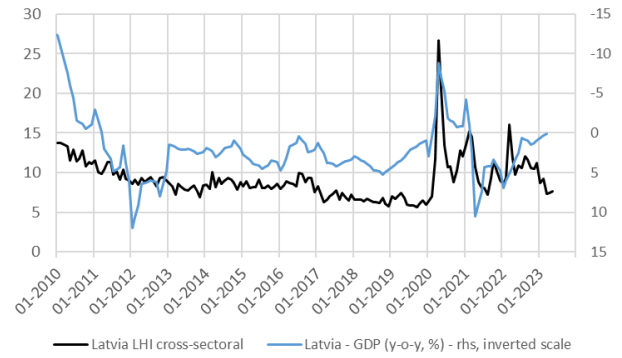
Graph A.6: Greece Labour Hoarding Indicator (LHI), GDP (y-o-y, %)



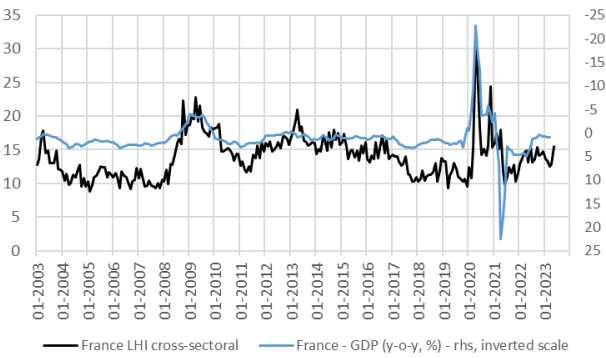
Graph A.7: Spain Labour Hoarding Indicator (LHI), GDP (y-o-y, %)



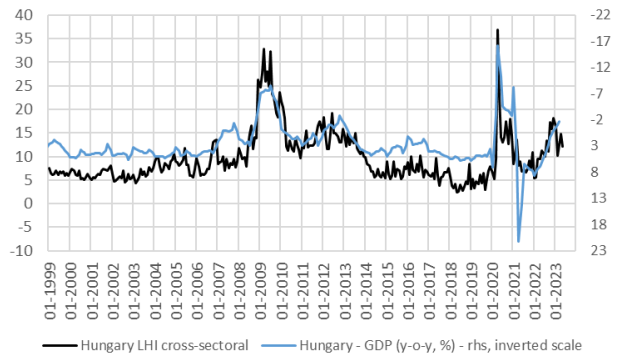
Graph A.11: Latvia Labour Hoarding Indicator (LHI), GDP (y-o-y, %)



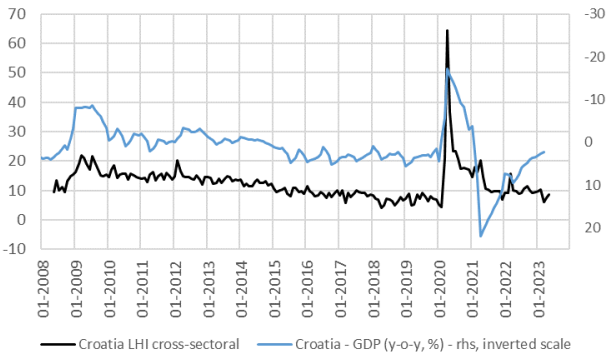
Graph A.8: France Labour Hoarding Indicator (LHI), GDP (y-o-y, %)



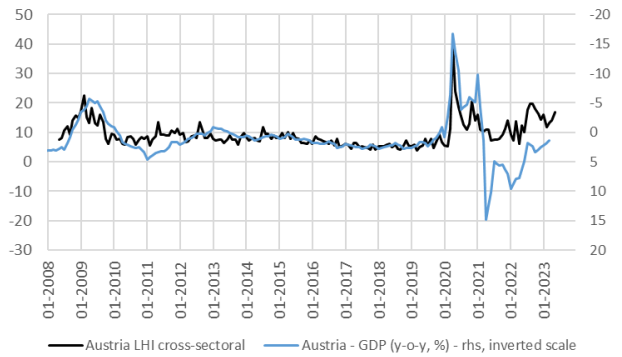
Graph A.12: Hungary Labour Hoarding Indicator (LHI), GDP (y-o-y, %)



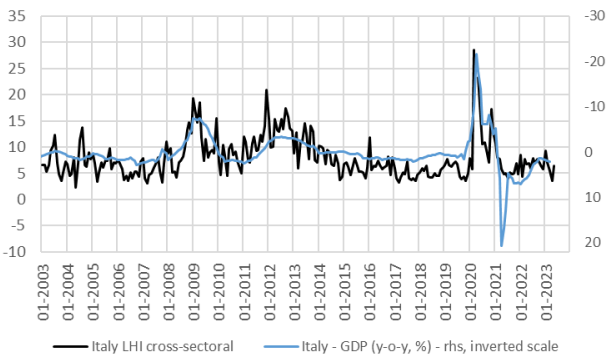
Graph A.9: Croatia Labour Hoarding Indicator (LHI), GDP (y-o-y, %)



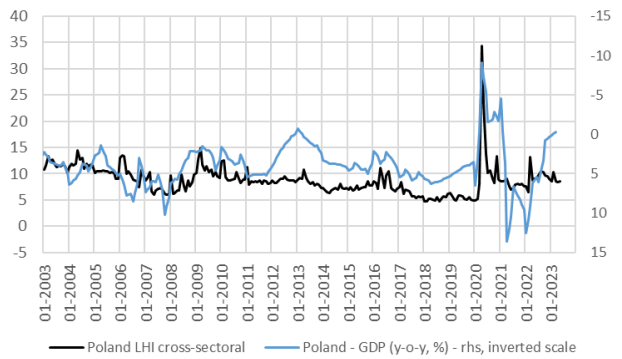
Graph A.13: Austria Labour Hoarding Indicator (LHI), GDP (y-o-y, %)



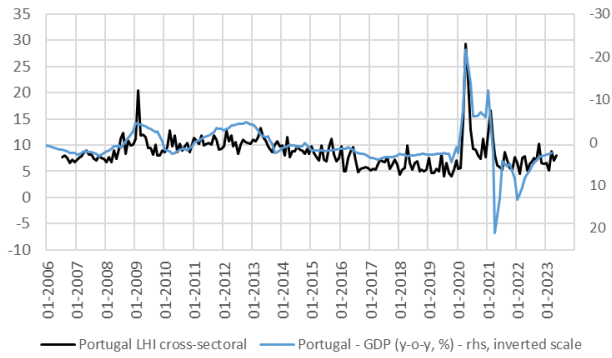
Graph A.10: Italy Labour Hoarding Indicator (LHI), GDP (y-o-y, %)



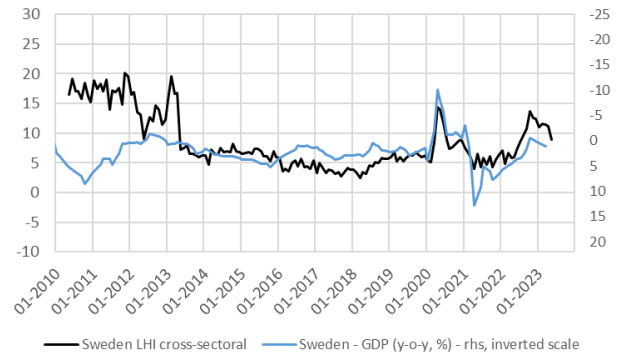
Graph A.14: Poland Labour Hoarding Indicator (LHI), GDP (y-o-y, %)



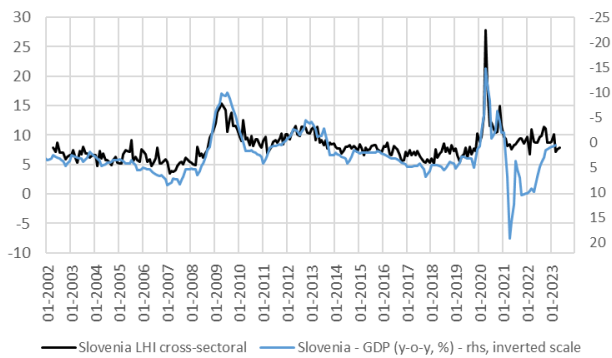
Graph A.15: Portugal Labour Hoarding Indicator (LHI), GDP (y-o-y, %)



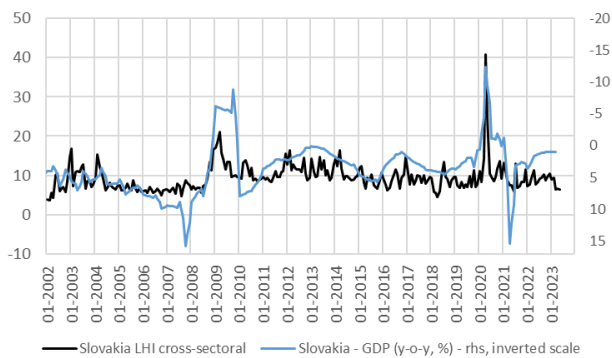
Graph A.19: Sweden Labour Hoarding Indicator (LHI), GDP (y-o-y, %)



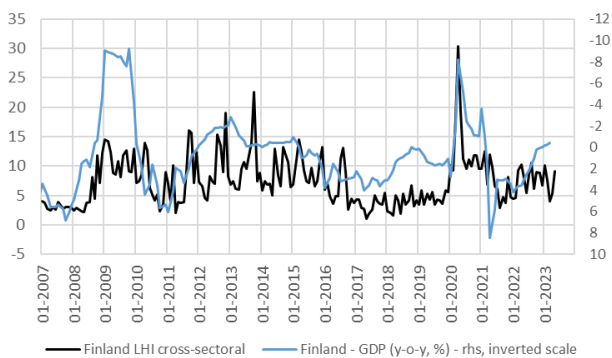
Graph A.16: Slovenia Labour Hoarding Indicator (LHI), GDP (y-o-y, %)



Graph A.17: Slovakia Labour Hoarding Indicator (LHI), GDP (y-o-y, %)



Graph A.18: Finland Labour Hoarding Indicator (LHI), GDP (y-o-y, %)



ANNEX

Reference series

Confidence indicators	Reference series from Eurostat (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.

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