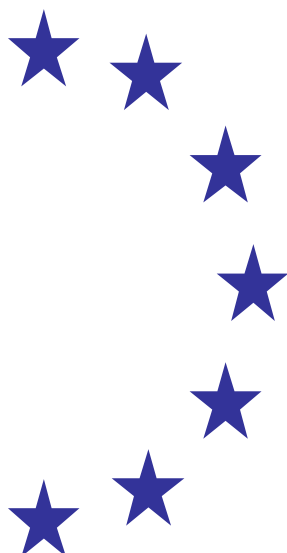


EUROPEAN COMMISSION  
DIRECTORATE-GENERAL FOR  
ECONOMIC AND FINANCIAL AFFAIRS



**The Joint Harmonised EU Programme of  
Business and Consumer Surveys**

**User Guide**

(updated February 2020)

## ABBREVIATIONS AND SYMBOLS USED

### Member States (as of 1 February 2020)

BE	Belgium	LT	Lithuania
BG	Bulgaria	LU	Luxembourg
CZ	Czech Republic	HU	Hungary
DK	Denmark	MT	Malta
DE	Germany	NL	Netherlands
EE	Estonia	AT	Austria
IE	Ireland	PL	Poland
EL	Greece	PT	Portugal
ES	Spain	RO	Romania
FR	France	SI	Slovenia
HR	Croatia	SK	Slovakia
IT	Italy	FI	Finland
CY	Cyprus	SE	Sweden
LV	Latvia		

EU European Union, 27 Member States : BE, BG, CZ, DK, DE, EE, IE, EL, ES, FR, HR, IT, CY, LV, LT, LU, HU, MT, NL, AT, PL, PT, RO, SI, SK, FI, SE.

EA Euro area, 19 Member States having adopted the single currency: BE, DE, EE, IE, EL, ES, FR, IT, CY, LV, LT, LU, MT, NL, AT, PT, SI, SK, FI.

### Candidate countries

ME	Montenegro	RS	Serbia
MK	North Macedonia	TR	Turkey
AL	Albania		

### Third countries

UK United Kingdom

### Other abbreviations

BCI	Business Climate Indicator
BCS	Business and consumer surveys
DG ECFIN	Directorate-General for Economic and Financial Affairs
ECB	European Central Bank
Eurostat	Statistical Office of the European Communities
EEI	Employment Expectations Indicator
ESI	Economic Sentiment Indicator
NACE	Classification of economic activities in the European Community
OECD	Organisation for Economic Co-operation and Development

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European Commission

Directorate-General for Economic and Financial Affairs

# **The Joint Harmonised EU Programme of Business and Consumer Surveys**

User Guide

updated in February 2020

## 1. INTRODUCTION

Business and consumer surveys provide essential information for economic surveillance, short-term forecasting and economic research. Moreover, they are widely used to detect turning points in the economic cycle. Surveys are therefore a key complement to official statistics, which are often available after long delays. The survey data generated within the framework of the Joint Harmonised EU Programme of Business and Consumer Surveys are particularly useful for monitoring economic developments at Member State, EU and euro-area level. High frequency, timeliness and continuous harmonisation are among their main qualities.

The Commission's harmonised survey programme, managed by the Directorate-General for Economic and Financial Affairs (DG ECFIN), was set up in 1961, and its scope has since expanded considerably in terms of both countries and sectors covered. The data published every month by DG ECFIN are derived from surveys conducted by national institutes in the Member States and the candidate countries. With these data, DG ECFIN builds composite indicators to track cyclical movements in a specific sector or in the economy as a whole. The survey results are then used by DG ECFIN for economic analysis, surveillance and short-term forecasting. Outside the Commission, the ECB, central banks, research institutes and financial institutions frequently use the EU survey data for both qualitative and quantitative analysis.

The aim of this User Manual is to provide detailed information on the Commission's survey programme. It includes a thorough description of the harmonised surveys and of the method used by the Commission to process survey results, and informs on when and where the results are published.

The Manual is structured as follows. Chapter 2 gives an overview of the survey programme and of the common features of the harmonised surveys. Chapter 3 explains how the survey results are collected and processed, while Chapter 4 describes how they are disseminated and published.

## 2. GENERAL PRINCIPLES UNDERLYING THE HARMONISED BUSINESS AND CONSUMER SURVEYS

### 2.1. Overview of the harmonised survey programme

#### Past and future developments in the survey programme

The Joint Harmonised EU Programme of Business and Consumer Surveys (hereafter referred to as the BCS programme) was launched by the Commission decision of 15 November 1961.<sup>1</sup> The first survey was the harmonised business survey in the manufacturing industry conducted in 1962. Since then, the sector coverage of the programme has widened considerably. The BCS programme was extended to the construction sector and to investment plans in the manufacturing sector in 1966, to consumers in 1972, to the retail trade in 1984, and to the services sector in 1996. Since 2007, the Commission conducts a

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<sup>1</sup> The BCS programme is implemented by DG ECFIN pursuant to the Commission's institutional prerogatives. The programme was initiated by a Commission decision in November 1961 and was modified through subsequent Council and Commission decisions. It was last approved through Commission decision C(97) 2241 of 15 July 1997. Regular updates on the implementation of the Programme in terms of use, methodology and coverage were presented in Commission communications COM(2000) 770 of 29 November 2000, COM(2006) 379 of 12 July 2006, SEC(2012) 227 of 4 April 2012 and C(2016) 6634 of 20 October 2016.

survey in the financial services sector at EU and euro-area level.<sup>2</sup> The sensitivity of this sector with regard to confidentiality, together with its idiosyncrasies in terms of cyclical behaviour, were the reasons behind the separation of this sector from the general services sector survey.

Meanwhile, the geographical coverage of the programme has been regularly extended to include new Member States as well as new candidate countries. The programme currently covers all 27 EU Member States, the UK (which, following its withdrawal from the EU on 31 January 2020, continues to be covered during the transition period) and all five EU candidate countries (i.e. Montenegro, North Macedonia, Albania, Serbia and Turkey). The integration of the candidate countries into the programme at an early stage is necessary in order to provide reliable and comparable data to follow their economic situation, and to guarantee the production of accurate EU aggregates once these countries become members of the EU.

### Harmonisation and Commission financial support

The harmonised surveys are carried out at national level by partner institutes such as ministries, statistical offices, central banks, research institutes, business associations or private companies. The surveys are conducted according to a common methodology, which consists essentially of harmonised questionnaires and a common timetable (see Section 2.2).

The institutes are selected by the Commission through a call for proposals. The Commission supports their activity with action grants, which are limited to a maximum of 50% of the total costs of the surveys. These grants are designed to cover the costs associated with the adoption of the harmonised methodology. As the Commission's financial support takes the form of grants, the data collected remain the property of the institutes, but the Commission acquires a parallel right of free use of the data. In contrast, when the national institutes have no clear interest or purpose in conducting a particular type of survey, the Commission concludes a service contract with the selected institute. In such cases, the Commission covers the full cost of the survey and has the copyright of the data.

### Survey frequency and sample size

Six surveys are currently conducted on a monthly basis in the following areas: manufacturing industry,<sup>3</sup> construction, consumers, retail trade, services, and financial services. Some additional questions are asked on a quarterly basis in the surveys in industry, construction, services, financial services and among consumers. In addition, an investment survey of the manufacturing sector, which gathers information on companies' investment plans, is conducted twice a year.

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<sup>2</sup> The objective of the survey is to achieve representative results for the EU and the euro area as a whole, but not necessarily for each individual Member State. The survey is conducted in twelve Member States: Belgium, Czech Republic, Germany, Ireland, Spain, France, Italy, Luxembourg, the Netherlands, Austria, Poland, and Sweden.

<sup>3</sup> In the rest of the publication, this survey is referred to as the industry survey.

Table 2.1: Nominal sample sizes per Member State and per survey

	Industry	Investment	Services	Consumer	Retail trade	Construction
<b>EU</b>	<b>37 790</b>	<b>44 470</b>	<b>43 700</b>	<b>32 420</b>	<b>29 740</b>	<b>24 000</b>
<b>EA</b>	<b>25 360</b>	<b>29 440</b>	<b>26 970</b>	<b>23 900</b>	<b>17 200</b>	<b>13 110</b>
<b>BE</b>	990	1 160	520	1 850	1 000	1 000
<b>BG</b>	1 420	3 480	1 230	1 000	1 230	790
<b>CZ</b>	880	870	780	1 000	320	590
<b>DK</b>	500	810	2 800	1 000	1 400	800
<b>DE</b>	2 890	5 000	3 220	2 000	1 730	2 550
<b>EE</b>	250	280	770	800	160	150
<b>IE</b>	1 100	1 000	2 800	1 000	1 600	600
<b>EL</b>	940	950	720	1 500	490	410
<b>ES</b>	1 760	1 860	1 000	2 000	1 100	290
<b>FR</b>	4 200	4 000	4 500	1 700	3 000	2 500
<b>HR</b>	800	600	850	1 000	500	500
<b>IT</b>	4 800	4 800	2 400	2 000	1 400	940
<b>CY</b>	120	300	260	600	250	120
<b>LV</b>	880	880	1 080	1 000	570	300
<b>LT</b>	750	750	970	1 200	720	570
<b>LU</b>	110	100	:	500	:	110
<b>HU</b>	1 610	1 470	1 500	1 000	670	1 500
<b>MT</b>	350	350	610	1 000	240	210
<b>NL</b>	2 040	4 000	3 150	1 050	730	1 300
<b>AT</b>	900	660	1 500	1 500	2 000	300
<b>PL</b>	3 500	3 600	4 300	1 020	5 200	5 000
<b>PT</b>	1 100	1 350	1 440	900	660	700
<b>RO</b>	2 300	2 300	2 820	1 000	2 490	1 230
<b>SI</b>	780	770	830	1 100	820	350
<b>SK</b>	720	600	500	1 200	520	500
<b>FI</b>	680	630	700	1 000	210	210
<b>SE</b>	1 420	1 900	2 450	1 500	730	480
<b>UK</b>	2 300	2 300	1 400	2 000	570	1 200
<b>ME</b>	140	500	500	1 000	220	110
<b>MK</b>	240	240	200	1 000	240	200
<b>AL</b>	410	400	350	1 200	410	220
<b>RS</b>	1 560	1 560	1 660	960	1 670	920
<b>TR</b>	2 230	2 230	2 050	3 800	480	620

Note: ":" = not available/applicable.

Source: European Commission services

The *sample size* for each survey varies across countries according to the heterogeneity of their economies, and is generally positively related to their respective population size (Table 2.1). About

135 000 firms and some 32 000 consumers are currently surveyed every month across the EU. The nominal sample of the industry survey includes some 38 000 units that are surveyed every month, while the biannual investment survey includes about 44 000 units. The nominal sample size for the services survey is ca. 44 000 units. In the case of the retail trade and construction surveys, the nominal samples consist of roughly 30 000 and 24 000 firms respectively. In addition, around 1000 firms in the financial services sector in the EU are contacted each month. It has to be noted that the reported figures are nominal in the sense that they are generally affected by non-response. The effective sample sizes, i.e. the numbers of actually conducted interviews/filled-in questionnaires, are usually about 30% lower. The effective samples at the EU (euro area) level are thus around 26 000 (18 000) for industry, 31 000 (21 000) for investment, 31 000 (19 000) for services, 23 000 (17 000) for consumers, 21 000 (12 000) for retail trade and 17 000 (9 000) for construction. For details at the country level, see the metadata sheets available at

[http://ec.europa.eu/economy\\_finance/db\\_indicators/surveys/metadata/index\\_en.htm](http://ec.europa.eu/economy_finance/db_indicators/surveys/metadata/index_en.htm).

### Balances and composite indicators

Answers obtained from the surveys are aggregated in the form of “balances”. Balances are constructed as the difference between the percentages of respondents giving positive and negative replies. The Commission calculates EU and euro-area aggregates on the basis of the national results and seasonally adjusts the balance series.

The balance series are then used to build composite indicators. First, for each surveyed sector, the Commission calculates confidence indicators as arithmetic means of answers (seasonally adjusted balances) to a selection of questions closely related to the reference variable they are supposed to track (e.g. industrial production for the industrial confidence indicator). These indicators thus provide information on economic developments in the different sectors. Second, the results for the five surveyed sectors are aggregated into the Economic Sentiment Indicator, whose purpose is to track GDP growth at Member State, EU and euro-area level. Finally, the Commission produces an Employment Expectations Indicator, which summarises managers’ employment plans in the four surveyed business sectors (industry, services, retail trade, construction) and thus provides a timely indication of changes in total employment. The calculation of balances and composite indicators is described in detail in Chapter 3.

## 2.2. Common properties of the surveys

### Harmonisation

The principle of harmonisation underlying the Commission’s survey programme aims to produce a set of comparable data for all countries. Harmonisation is essential to allow the comparison of business cycles in the different Member States as well as the calculation of meaningful business cycle indices for the euro area and the EU as a whole.

To achieve comparability between countries, the BCS programme is governed by two basic principles:

- use by all national institutes of the same harmonised questionnaires; and
- conduct of the national surveys, and transmission of the results, according to a common timetable.

Harmonisation does not mean uniformity. The national questionnaires may include additional questions, beyond the harmonised ones. Similarly, the sectoral breakdown in the questionnaires may be more detailed than the one set in the programme. Also, the national partner institutes are free to organise the



fieldwork the way that best suits the purpose. While the sample design, the sample size, the survey mode, and other methodological considerations are in principle left to their discretion, these important parameters shall be chosen so as to ensure a high degree of representativeness and a low degree of irregular short-term fluctuations (noise) in the data. A broad and frequently updated sampling frame and a high number of completed questionnaires are considered as key in this respect. The survey methodology of the national institutes is scrutinised in the evaluation stage of the Commission's calls for proposals. Institutes are encouraged to follow the list of best practice for the conduct of business and consumer surveys developed by the Commission.<sup>4</sup>

The Commission plays a leading role in the evolution of the common methodology of the BCS programme. It regularly commissions feasibility studies on relevant methodological issues and organises an annual workshop with all participating institutes in order to discuss harmonisation issues, such as changes in the questionnaires and developments in the survey programme. The Commission also organises every two years a joint meeting with the OECD with a view to examining methodological issues of common interest to both EU and non-EU countries.

### Representative sample

The participating institutes should ensure that the samples chosen for each survey are representative of the sector. The sample size must be large enough to provide reliable data. This issue is discussed in more detail in Section 3.1.

### Timetable

The *timing* is common to all the harmonised surveys. Fieldwork for the monthly surveys is generally performed in the first two to three weeks of each month and the quarterly surveys are carried out in the first two to three weeks of the first month of each quarter (January, April, July and October). Likewise, the questions that are asked only on a quarterly basis are included in the questionnaires in January, April, July and October. The business survey results are sent by e-mail to the Commission at least five working days before the end of the reference month and in accordance with a predefined format. The deadline for the delivery of consumer survey results is generally seven working days before the end of the month. The semi-annual investment surveys are carried out in March/April and in October/November, and the results are sent to the Commission at least five working days before the end of April and November, respectively.

### Questionnaires

One essential feature of the BCS programme is the use by participating institutes of harmonised questionnaires. The standard questionnaires are given in Annex 2. In practice, the questionnaires used by the institutes may differ slightly from the harmonised ones, either due to the inclusion of additional questions or as a result of a different wording of the questions in the national language, required for strictly idiomatic reasons. In this regard, it is imperative to retain the meaning of the original question in

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<sup>4</sup> The list is available at [http://ec.europa.eu/economy\\_finance/db\\_indicators/surveys/method\\_guides/index\\_en.htm](http://ec.europa.eu/economy_finance/db_indicators/surveys/method_guides/index_en.htm). It builds on and incorporates the earlier 'International guidelines on data collection and survey design' developed by the Commission and the OECD in cooperation with national survey institutes. These guidelines, together with general methodological considerations, can be found in the European Commission special report No 5/2006 on the Joint Harmonised EU Programme of Business and Consumer Surveys, available at: [http://ec.europa.eu/economy\\_finance/db\\_indicators/surveys/documents/studies/ee\\_bcs\\_2006\\_05\\_en.pdf](http://ec.europa.eu/economy_finance/db_indicators/surveys/documents/studies/ee_bcs_2006_05_en.pdf).

English. Other differences in the questionnaires (e.g. use of different concepts, different reference periods, different answering categories, etc.) must be avoided in order to ensure comparability of survey results across countries. Finally, the questionnaires can occasionally include additional pilot questions, whose results are not necessarily made public.

### Monthly business and consumer surveys

The harmonised surveys provide information on a wide range of variables that are useful to monitor cyclical developments. Table 2.2 presents the list of variables covered in the monthly and quarterly business and consumer surveys. As mentioned previously, most of the questions are asked on a monthly basis, but a few additional questions are added every quarter to the surveys in industry, construction and among consumers. Nearly all the questions are of a qualitative nature.

The *industry survey* is largely qualitative. The main questions refer to an assessment of recent trends in production, of the current levels of order books and stocks, as well as expectations about production, selling prices and employment. In addition, the survey provides on a quarterly basis quantitative information on two variables that are not reported in conventional statistics, namely capacity utilisation and the number of months of production assured.

In view of the scarcity of national account data on building activity, *construction surveys* are an important source of information concerning short-term developments in this sector. The construction survey provides qualitative information, with the exception of one quantitative question on the number of months of production secured.

The information provided by the *retail trade survey* is entirely qualitative. Managers are asked about their assessment of recent developments in their business situation, of the current level of stocks, and their expectations about a number of economic variables (production, new orders, employment and prices charged).

The purpose of the *consumer survey* is twofold: first, to collect information on households' spending and savings intentions, and second, to assess their perception of the factors influencing these decisions. To this end, the questions are organised around four topics: the households' financial situation, the general economic situation, savings and intentions with regard to major purchases. The consumer survey is mainly qualitative. Since 2003, two quantitative questions are asked concerning perceived and expected price changes.

The monthly *services survey* provides information about managers' assessment of their recent business situation, of the past and future changes in their company's turnover and employment and of their expected selling prices. All the replies are qualitative. In terms of quarterly questions, managers are asked about the main factors currently limiting their business. Since 2011, they are also asked if the volume of activity could be increased with present resources and, if so, by how much. The latter question is used to calculate a measure of capacity utilisation in the services sector.

As the services survey, the monthly *financial services survey* provides information about managers' assessment of their recent business situation, and of the past and future changes in their company's turnover and employment. All the replies are qualitative. In terms of quarterly questions, managers are asked about their assessment and their expectations about a number of economic variables (operating income, operating expenses, profitability of their company, capital expenditure, and their competitive position in their country, the euro area, the EU and outside the EU).

All the monthly surveys have a similar *answer scheme*. For qualitative questions, answers are usually given according to a three-option ordinal scale: "increase" (+), "remain unchanged" (=), "decrease" (-); or "more than sufficient" (+), "sufficient" (=), "not sufficient" (-); or "too large" (+), "adequate" (=), "too small" (-). In some cases, respondents have the choice between four, five or six options. In the consumer survey, respondents can usually choose among six options: "got/get a lot better" (++)

"got/get a little better" (+), "stayed/stay the same" (=), "got/get a little worse" (-), "got/get a lot worse" (-  
-), don't know (N).

Table 2.2: Variables covered in the monthly business and consumer surveys

Type of survey	Monthly questions	Quarterly questions
<b>Industry</b>	Production, past 3 months Production, next 3 months Total order books Export order books Stocks of finished products Selling prices, next 3 months Firm's employment, next 3 months	Factors limiting production Production capacity, current Months of production secured Order books, past 3 months Export order books, next 3 months Capacity utilisation Competitive position, domestic market Competitive position, EU markets Competitive position, extra-EU markets
<b>Construction</b>	Building activity, past 3 months Factors limiting building activity Overall order books Firm's employment, next 3 months Selling prices, next 3 months	Months of production secured
<b>Retail trade</b>	Business activity, past 3 months Business activity, next 3 months Stocks of goods Orders placed with suppliers, next 3 months Firm's employment, next 3 months Selling prices, next 3 months	
<b>Services</b>	Business situation, past 3 months Demand/Turnover, past 3 months Demand/Turnover, next 3 months Firm's employment, past 3 months Firm's employment, next 3 months Selling prices, next 3 months	Factors limiting business Potential increase in volume of activity
<b>Consumers</b>	Financial situation, past 12 months Financial situation, next 12 months General economic situation, past 12 months General economic situation, next 12 months Consumer prices, past 12 months (qualitative and quantitative change) Consumer prices, next 12 months (qualitative and quantitative change) Unemployment, next 12 months Major purchases of durable consumer goods, current environment Major purchases intentions, next 12 months Savings, current environment Savings intentions, next 12 months Capacity to save	Purchase of a car, next 12 months Purchase of a house, next 12 months Home improvements, next 12 months
<b>Financial services</b>	Business situation, past 3 months Demand/Turnover, past 3 months Demand/Turnover, next 3 months Firm's employment, past 3 months Firm's employment, next 3 months	Operating income, past 3 months Operating income, next 3 months Operating expenses, past 3 months Operating expenses, next 3 months Company's profitability, past 3 months Company's profitability, next 3 months Capital expenditure, past 3 months Capital expenditure, next 3 months Competitive position (CP), total, past 3 months CP, domestic market, past 3 months CP, euro-area market, past 3 months CP, EU market, past 3 months CP, extra-EU market, past 3 months CP, total, next 3 months CP, domestic market, next 3 months CP, euro-area market, next 3 months CP, EU market, next 3 months CP, extra-EU market, next 3 months

Source: European Commission services

The answer scheme is different for quantitative questions. These are the questions about capacity utilisation, months of production assured, potential increase in the volume of activity and consumer price inflation. Here, answers are requested in percentage of full capacity, in number of months or in percentage, respectively.

For questions on factors limiting production, a list of possible factors is proposed, and respondents are requested to select one or several factors (yes/no answer).

### Investment survey

The investment survey is carried out twice a year – in March/April (“spring survey”) and in October/November (“autumn survey”) – among companies in the manufacturing industry sector. In a large number of countries, the survey is carried out as an attachment to the industry survey, using the same panel of companies. In some countries, however, samples are different and in one country (Sweden), the two surveys are currently conducted by different institutes.

Table 2.3: Variables covered in the half-yearly investment survey and answer scheme

Survey	Variable	Answer scheme
<b>March/April survey:</b>		
	Change in investment from year t-2 to year t-1	% change
	Change in investment from year t-1 from year t	% change
<b>October/November survey:</b>		
	Change in investment from year t-1 to year t	% change
	Change in investment from year t to year t+1	% change
	Type(s) of investment planned for years t and t+1	yes/no
	Factors influencing investment for years t and t+1:	
	- demand	(++), (+), (=), (-), (--), N
	- financial resources or expected profits	(++), (+), (=), (-), (--), N
	- technical factors	(++), (+), (=), (-), (--), N
	- other factors	(++), (+), (=), (-), (--), N

Note: (++) = very stimulating, (+) = stimulating, (=) = no influence, (-) = limiting, (--) = very limiting, N = no answer.

Source: European Commission services

The spring and autumn surveys have different questionnaires (Table 2.3; for the complete questionnaires, see Annex 2.). In spring, managers are asked about the percentage change in investment of their company from year t-2 to year t-1 and from year t-1 to t. In autumn, they are asked about the percentage change in investment of their company from year t-1 to year t and from year t to t+1. The autumn survey also contains a question on the type of investment (replacement, extension of production capacity, technical progress, other) planned in years t and t+1, as well as a question on the factors driving investment (demand, profitability, technical factors, others) planned in years t and t+1.

Regarding questions on the percentage change of investment, in the absence of any further information, it can be assumed that companies report nominal changes rather than real (inflation-adjusted) changes. Indeed, many companies would probably find it hard to provide figures on the growth of real investment. However, from an economic point of view, real investment is of equal, if not higher,

interest. For this reason, DG ECFIN publishes also real estimates by using the deflator for equipment investment in the AMECO<sup>5</sup> database.

The *answer scheme* for the questions on the type(s) of investment and on the factors influencing investment is different. Regarding the former question, companies are requested to indicate the dominant type(s) of investment, while the answer scheme for the question on the factors influencing investment is of the traditional qualitative type (“very stimulating”, “stimulating”, “no influence”, “limiting”, “very limiting”).

## Classifications

For the business surveys (industry, retail trade, construction, services and investment), survey results are broken down by branches according to the Classification of economic activities in the European Community (NACE), Rev. 2 at the two-digit level.<sup>6</sup> The classifications can be found in Annex A.2. The change in the identification and grouping of similar economic activities associated with the move to NACE rev.2 in May 2010 implied a statistical break in the time series, particularly at the branch level.<sup>7</sup> The services survey raises specific issues in terms of sector coverage (see Box 2.2).

For the consumer survey, respondents are categorised according to five criteria: income, occupation, education, age and sex. The definitions of the different categories are given in Annex 2.2.3.

### Box 2.2: Sector coverage of the services survey

The sector coverage of the services survey varies across countries. In principle, the BCS Programme requires information on 37 branches, i.e. divisions (two-digit level) from the NACE Rev. 2 classification. These divisions cover the sections H to N and R to S of NACE Rev. 2. Trade (section G) and public services (sections O to Q) are thus deliberately excluded. The 37 branches/divisions of interest in the services survey can be classified into three groups in terms of country coverage:

- A first group consists of divisions 49 (land transport and transport via pipelines), 52 (warehousing and support activities for transportation), 55 (accommodation), 56 (food and beverage service activities), 58 (publishing activities), 61 (telecommunications), 62 (computer programming, consultancy and related activities), 68 (real estate activities), 69 (legal and accounting activities), 70 (activities of head offices; management consultancy activities), 71 (architectural and engineering activities; technical testing and analysis), 73 (advertising and market research), 74 (other professional, scientific and technical activities), 77 (rental and leasing activities), 78 (employment activities), 79 (travel agency, tour operator reservation service and related activities), 81 (services to buildings and landscape activities) and 82 (office administrative, office support and other business support activities); this group is covered by virtually all Member States. In terms of value added, this group represents nearly 70% of the required services activities (as described above) in the EU.
- A second group consists of divisions 50-51 (water and air transport), 53 (postal and courier activities), 59 (video and music activities), 60 (programming and broadcasting activities), 63 (information service activities), 72 (scientific research and development), 80 (security and investigation activities), 92 (gambling and betting activities), 93 (sports, amusement and recreation activities), 95 (repair of computers and personal and household goods) and 96 (other personal service activities); a significant number (between 6 and 11) of institutes do not include results for these branches. In terms of value added, this group represents about 10% of the required EU services activities.

<sup>5</sup> The AMECO (Annual Macroeconomic) database is run by DG ECFIN and is publicly available on the internet.

<sup>6</sup> NACE rev.2 became compulsory for all statistics classified according to economic activities produced by the Commission or Member States (EC Regulation No 1893/2006).

<sup>7</sup> For further information on this, see

[http://ec.europa.eu/economy\\_finance/db\\_indicators/surveys/time\\_series/index\\_en.htm](http://ec.europa.eu/economy_finance/db_indicators/surveys/time_series/index_en.htm).

- A third group consists of divisions 64-66 (financial services), 75 (veterinary activities), 90-91 (cultural activities) and 94 (activities of membership organisations); for this group, a majority of surveys includes no information. In terms of value added, this group represents close to 20% of the required services activities. It has to be noted that around 80% of this concerns financial services activities which are covered by the dedicated financial services survey.

In theory, the sector coverage of a survey should be as wide as possible. However, services being a very heterogeneous sector, some branches might show a very idiosyncratic pattern in terms of business cycle behaviour. In particular, this may be the case for public and semi-public services (e.g. healthcare, cultural activities) and also, to some extent, for financial services. For the sake of sector homogeneity, it might, therefore, be appropriate not to aggregate these branches with the rest of the services sector. This is in line with the Commission's decision to conduct a separate survey in the financial services sector at EU level. Furthermore, in order to ensure cross-country comparability of surveys, the branches covered by national surveys should coincide or overlap to the maximum. In this regard, the situation is continuously improving as several participating institutes are extending the sector coverage of their services surveys.

### 3. COLLECTING AND PROCESSING BUSINESS AND CONSUMER SURVEYS

#### 3.1. Sampling

The survey samples are derived from a frame, which is supposed to register all the units of the whole population under question. The frame can be created from official or statistical registers, or from membership lists of business associations and chambers of commerce. Taking into account the various changes that might occur in the population (mergers, bankruptcies, starting of new firms, etc.), a regular update of the frame is imperative in order to keep it representative. Good coverage of the frame is indeed very important to secure the quality of the surveys.

The coverage rate of the sample, generally measured via turnover or employment, indicates at which percentage rate the sample represents the frame. The sample size needs to be sufficiently large to give estimates of the balances and other items of interest which are reliable enough to meet users' requirements. The appropriate sample size therefore depends on the level of precision required by users and is determined mainly by the variance of the individual responses. Given that large countries tend to show larger structural heterogeneity than very small countries, the sample size tends to be positively related to the size of the economy.

The participation of managers and consumers in the surveys is voluntary in most countries.<sup>8</sup> Naturally, some are unable or unwilling to respond. Non-response is a problem, in particular if the potential responses from the non-respondents would have deviated systematically from those who did respond. This would introduce a bias, i.e. the answers would no longer be representative of the population, which preferably should be corrected for. A high response rate, i.e. the degree to which managers or consumers answer the questionnaires, is therefore crucial for the quality and the reliability of the results.

In practice, a trade-off typically emerges between the desired precision and the required cost of a survey. In general, there are three methods of data collection such that the information collected can be used to draw inferences about the population. First, one can collect data from all units in the population. This is a costly and lengthy procedure unless the population is small. Second, one can collect data from a sample of units that have been selected from the population with the intention that they should be

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<sup>8</sup> Participation is, however, compulsory in Spain, France, Italy, Luxembourg, the Netherlands, Poland and Portugal for some or all surveys.

representative of that population. A sample of this kind is called a purposive sample. In order to draw inferences about the population using a purposive sample, a number of assumptions have to be made about the representativeness of the surveyed units. In general, there are limitations to the inferences that can be drawn from purposive samples when the probability of selection is not known. Third, data can be collected from a random sample of units which have been selected with known probabilities of selection from the population. In this case, no assumptions about the representativeness of the data collected are needed. Moreover, there are well-known techniques for determining the precision of estimated totals and averages.

In order to make a random sample more efficient (a smaller sample for a given level of precision), many institutes use some form of stratified random sampling that involves the separation of the population into non-overlapping sub-populations, called strata, which have similar variance with regard to the key variables covered in the survey. Stratification is applied according to different criteria. The stratification criteria used for business surveys are mainly firm size and activity sector. For consumer surveys, the sex, age, education, income and occupation of the person are commonly used for the selection of the respondents.<sup>9</sup>

For business surveys, the sample does not differ much from one period to another. In most cases, a panel of companies is established and surveyed each month. This approach is motivated by the structure of the production system itself, which does not change significantly from one period to another and is also often highly concentrated. It is then essential to question the dominant companies in each branch. There are a number of advantages to be gained from always questioning the same firms: notably, replies are received more quickly, and the variability of results between two successive surveys is also reduced, having a positive effect on the required sample size. It is therefore recommended that the same panel is maintained over time for business surveys and that it is updated at regular intervals, or that a smaller part of the sample is replaced each period (rotating panels).

### 3.2. Aggregation and weighting

Starting from each stratum, the percentages of answers to each reply option are calculated. Two alternatives are available at this stage: a simple counting of the answers or a weighted counting. In the first case, the numbers of positive and negative replies are counted, and then expressed as percentages of the total number of firms in the stratum. In the second case, a weighting coefficient is used for each firm representing an aspect of its size (for example, in terms of turnover, employment or production). The weighting scheme aims to improve the comparability of the survey responses and reference series, rather than having an *a priori* idea that larger firms judge or predict better.

Whether weighted or not, the outcome for each stratum  $h$ , for each variable  $X$ , for a given month  $t$ , is a column vector

$X_h = (P_h, E_h, M_h)$  where  $P_h$  is the share reporting an increase,  $E_h$  is the share reporting no change, and  $M_h$  is the share reporting a decrease.

Having obtained the results for each stratum, the overall results are calculated as weighted averages of the results by strata. Weighting coefficients used at this stage reflect the relative significance of each stratum in the frame or population and are often derived from official statistics, such as the value added of a specific sector as a share of that of the total industry in question. The weighting in this case is used to improve the quality of the sample, by correcting any possible discrepancies of representation. Total results for each variable are then a vector

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<sup>9</sup> The consumer surveys are in some countries carried out by so-called quota sampling. This sampling technique means that respondents (consumers) are searched for until a certain, predetermined, quota of respondents is reached. A shortcoming of this sampling method is that, since the sample is not random, no inference regarding the population can be drawn.



$$X = (\Sigma P_h \cdot w_h, \Sigma E_h \cdot w_h, \Sigma M_h \cdot w_h)$$

where  $w_h$  are the relative weighting coefficients for each stratum and  $\Sigma w_h = 1$ . Note also that, by construction,  $\Sigma P_h \cdot w_h + \Sigma E_h \cdot w_h + \Sigma M_h \cdot w_h = 100$ .

When business survey results are aggregated to higher levels, for instance at the European level, a weighted average of country results is obtained by applying relevant country weights (see Section 3.4).

### 3.3. Calculation of balances

On the basis of the distribution of the various options for each question, aggregate balances are calculated for each question. Balances are the difference between positive and negative answering options, measured as percentage points of total answers. In particular, if a question has three alternative options, “positive” (“up”, “more”, “more than sufficient”, “good”, “too large”, “increase”, “improve”, etc.), “neutral” (“unchanged”, “as much”, “sufficient”, “satisfactory”, “adequate”, etc.) and “negative” (“down”, “less”, “not sufficient”, “too small”, “decline”, etc.), and if P, E and M (with P+E+M=100) denote the percentages of respondents having chosen respectively the option positive, neutral, and negative, the balance is calculated as

$$B = P - M$$

In the case of questions with six options, i.e. the three options above plus “very positive” (“got/get a lot better”, “very much higher”, “increase sharply”, etc.), “very negative” (“got/get a lot worse”, “very unfavourable”, “fall sharply”, etc.) and “don’t know”, the balances are calculated on the basis of weighted averages. If P, E and M have the same meaning as in the previous paragraph, while PP denotes the percentage of respondents having chosen the option “very positive”, MM the percentage of respondents having chosen the option “very negative” and N is the percentage of respondents without any opinion (so that PP+P+E+M+MM+N=100), balances are calculated as

$$B = (PP + \frac{1}{2}P) - (\frac{1}{2}M + MM)$$

It is clear from the expressions above that balance values range from -100, when all respondents choose the negative option (or the most negative one in the case of five-option questions) to +100, when all respondents choose the positive (or the most positive) option.

When reporting the survey results, the Commission uses mainly balance statistics. There are, however, other ways of quantifying the results, such as the diffusion index (DI). This is defined as  $DI = P + \frac{1}{2} E$  under the restriction that  $P + E + N = 100$ . Moreover, there are more complex quantification methods which are based on distributional assumptions<sup>10</sup>. In order to allow analysts and researches to quantify the survey results using other methods than the balance statistic, detailed results by answer categories are available on DG ECFIN's website at:

[http://ec.europa.eu/economy\\_finance/db\\_indicators/surveys/time\\_series/index\\_en.htm](http://ec.europa.eu/economy_finance/db_indicators/surveys/time_series/index_en.htm)

<sup>10</sup> For a critical review of the different quantification methods see Nardo M. (2003), "The Quantification of Qualitative Survey Data: A Critical Assessment", *Journal of Economic Surveys*, Volume 17, Issue 5, pages 645–668, December 2003.

### 3.4. Calculating EU and euro-area aggregates

One important task of the Commission services (DG ECFIN) is the production of aggregate survey results for the EU and the euro area on the basis of the results received from the Member States. EU and euro-area aggregate replies to the questionnaires are calculated as weighted averages of the country-aggregate replies. The weights are the shares of each of the Member States in an EU (euro-area) reference series, and are smoothed by calculating a two-year moving average. The weights are usually updated every year in January. The reference series are extracted from AMECO and for the most recent period, where yearly reference series are not available, the Commission forecast is used.<sup>11</sup>

Table 3.1 summarises relevant information concerning the reference series used to compute the country weights.<sup>12</sup>

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<sup>11</sup> For the weights currently used, see [http://ec.europa.eu/comm/economy\\_finance/indicators/business\\_consumer\\_surveys/user\\_guide\\_country\\_weights.zip](http://ec.europa.eu/comm/economy_finance/indicators/business_consumer_surveys/user_guide_country_weights.zip).

<sup>12</sup> These are the weights used to aggregate the total sector results. At sub-sector level, weights based on short-term-statistics (STS) are used for the business surveys.

Table 3.1: Reference series (Eurostat database) used to compute the country weights

Survey	Reference series	Eurostat code
<b>Industry &amp; Investment</b>	Gross value added at constant prices, industry excluding construction	nama_10_a64 - National Accounts aggregates by industry (up to NACE A*64) B1G - Value added, gross B-E - Industry (except construction) CLV10_MEUR - Chain linked volumes (2010), million euro
<b>Construction</b>	Gross value added at constant prices, construction	nama_10_a64 - National Accounts aggregates by industry (up to NACE A*64) B1G - Value added, gross F - Construction CLV10_MEUR - Chain linked volumes (2010), million euro
<b>Services</b>	Gross value added at constant prices, services	nama_10_a64 - National Accounts aggregates by industry (up to NACE A*64) B1G - Value added, gross H Transportation and storage I Accommodation and food service activities J Information and communication K Financial and insurance activities L Real estate activities M_N Professional, scientific and technical activities; administrative and support service activities R Arts, entertainment and recreation S Other service activities CLV10_MEUR - Chain linked volumes (2010), million euro
<b>Retail Trade &amp; Consumer</b>	Private final consumption expenditure at constant prices	nama_10_gdp - GDP and main components (output, expenditure and income) P31_S14_S15 - Household and NPISH final consumption expenditure CLV10_MEUR - Chain linked volumes (2010), million euro

Source: European Commission services

On this basis, the percentage for each alternative answer to each question for the EU and the euro area is calculated as the weighted average of the corresponding percentages in each Member State or each euro-area member.

### 3.5. Seasonal adjustment

Leaving aside strikes, elections, large exchange-rate movements, very cold weather and other special events, business and consumer survey data record opinions that may be influenced by other events taking place at the same time every year. This is the case of, for instance, regular events, such as Christmas, certain public holidays, or the receipt of extraordinary wage bills in a given month of the year. Even though respondents are usually explicitly asked not to take into account such seasonal variations, in practice the answers frequently show seasonal patterns. Such variations in businesses' and

consumers' perceptions, opinions or expectations should ideally be eliminated when comparing two consecutive months. This is the goal of seasonal adjustment.

Once the balances per question for each survey at the aggregate (country, EU, euro-area) level are calculated, they are seasonally adjusted. The Commission is currently using Dainties as the seasonal-adjustment algorithm, as originally developed by Eurostat (see Annex A.2). This method has yielded satisfactory results for business and consumer survey data for many years. The main advantage of Dainties is the absence of revisions of past data when adding data at the end of the time series.

### 3.6. Calculation of composite indicators

Business and consumer surveys provide monthly judgements and anticipations concerning diverse facets of economic activity in the different sectors of the economy: industry, services, construction and retail trade, as well as consumers. Based on the detailed results of the Harmonised Programme, the Commission calculates and publishes a set of monthly composite indicators.

First, for each of the five surveyed sectors, so-called *confidence indicators* are produced to reflect overall perceptions and expectations at the individual sector level in a one-dimensional index. Each confidence indicator is calculated as the simple arithmetic average of the (seasonally adjusted) balances of answers to specific questions chosen from the full set of questions in each individual survey. The selection of questions is guided by the aim of achieving an as highly as possible coincident correlation of the confidence indicator with a reference series, such as year-on-year growth in industrial production, at EU or euro-area level.<sup>13</sup> The balance series from the selected questions are not standardised prior to their aggregation.<sup>14</sup>

Secondly, in order to be able to track overall economic activity, the broader *Economic Sentiment Indicator* (ESI) has been calculated since 1985. Based on the complete set of balance series underlying the individual confidence indicators, the ESI combines judgements and attitudes of producers and consumers by means of a weighted aggregation of standardised input series. Roughly speaking, the Economic Sentiment Indicator can be viewed as a summary of the five sector-specific confidence indicators (but see 3.6.6. for details).

Thirdly, since 2020, the set of monthly composite indicators published by the Commission also contains an *Employment Expectations Indicator*, which helps getting a timely indication of changes in total employment. The indicator is constructed as a weighted average of the employment expectations of managers in all four surveyed business sectors (i.e. industry, services, retail trade and construction).

Finally, the last part of this section contains a description of a composite indicator for the euro area based on factor methodology. This indicator only refers to manufacturing industry and can therefore be seen as a complement to the industrial confidence indicator.

In the following, the calculation method of the indicators is explained in more detail.

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<sup>13</sup> It has to be noted that the optimal combination of questions to track the reference series can change over time. DG ECFIN regularly checks the tracking performance of its confidence indicators. Structural changes and adjustment processes can lead to (transitory) swings in the performance of cyclical indicators. It is therefore important to base the assessment on a long-term perspective.

<sup>14</sup> While prior standardisation of the components may be preferable from a methodological point of view, the impact on the characteristics of the composite indicators (tracking performance, cyclicity) is negligible. This is due to the fact that the component series tend to be highly synchronised with each other on a sector level, such that any heterogeneity in terms of levels and cyclical amplitudes has only a limited effect on the dynamics of the composite. One advantage of non-standardisation is that the composite indicator keeps the scale and interpretation of a balance of percentage shares of positive and negative replies.

### 3.6.1. Industrial confidence indicator

The industrial confidence indicator is the arithmetic average of the balances (in percentage points) of the answers to the questions on production expectations, order books and stocks of finished products (the last with inverted sign). Balances are seasonally adjusted.

Questions (see Annex 2.1.1 for the complete questionnaire):

- Q2** Do you consider your current overall order books to be...?
- + more than sufficient (above normal)
  - = sufficient (normal for the season)
  - not sufficient (below normal)
- Q4** Do you consider your current stock of finished products to be...?
- + too large (above normal)
  - = adequate (normal for the season)
  - too small (below normal)
- Q5** How do you expect your production to develop over the next 3 months? It will...
- + increase
  - = remain unchanged
  - decrease

### 3.6.2. Services confidence indicator and financial services confidence indicator

The services confidence indicator is the arithmetic average of the balances (in percentage points) of the answers to the questions on business climate and on recent and expected evolution of demand. Balances are seasonally adjusted. The financial services indicator is calculated exactly in the same way.

Questions (see Annexes 2.2.1 and 2.7.1 for the complete questionnaires):

- Q1** How has your business situation developed over the past 3 months? It has ...
- + improved
  - = remained unchanged
  - deteriorated
- Q2** How has demand (turnover) for your company's services changed over the past 3 months? It has...
- + increased
  - = remained unchanged
  - decreased
- Q3** How do you expect the demand (turnover) for your company's services to change over the next 3 months? It will...
- + increase
  - = remain unchanged
  - decrease

### 3.6.3. Consumer confidence indicator

The consumer confidence indicator is the arithmetic average of the balances (in percentage points) of the answers to the questions on the past and expected financial situation of households, the expected general economic situation and the intentions to make major purchases over the next 12 months. Balances are seasonally adjusted.

Questions (see Annex 2.3.1 for the complete questionnaire):

- Q1** How has the financial situation of your household changed over the last 12 months? It has...
- ++ got a lot better
  - + got a little better
  - = stayed the same
  - got a little worse
  - got a lot worse
  - N don't know.
- Q2** How do you expect the financial position of your household to change over the next 12 months? It will...
- ++ get a lot better
  - + get a little better
  - = stay the same
  - get a little worse
  - get a lot worse
  - N don't know.
- Q4** How do you expect the general economic situation in this country to develop over the next 12 months? It will...
- ++ get a lot better
  - + get a little better
  - = stay the same
  - get a little worse
  - get a lot worse
  - N don't know.
- Q9** Compared to the past 12 months, do you expect to spend more or less money on major purchases (furniture, electrical/electronic devices, etc.) over the next 12 months? I will spend...
- ++ much more
  - + a little more
  - = about the same
  - a little less
  - much less
  - N don't know.

### 3.6.4. Retail trade confidence indicator

The retail trade confidence indicator is the arithmetic average of the balances (in percentage points) of the answers to the questions on the present and future business situation, and on stocks (the last with inverted sign). Balances are seasonally adjusted.

Questions (see Annex 2.4.1 for the complete questionnaire):

- Q1** How has (have) your business activity (sales) developed over the past 3 months?  
It has (They have) ...
- + improved (increased)
  - = remained unchanged
  - deteriorated (decreased)
- Q2** Do you consider the volume of stock currently hold to be...?
- + too large (above normal)
  - = adequate (normal for the season)
  - too small (below normal)
- Q4** How do you expect your business activity (sales) to change over the next 3 months? It (They) will...
- + improve (increase)
  - = remain unchanged
  - deteriorate (decrease)

### 3.6.5. Construction confidence indicator

The construction confidence indicator is the arithmetic average of the balances (in percentage points) of the answers to the questions on order book and employment expectations. Balances are seasonally adjusted.

Questions (see Annex 2.5.1 for the complete questionnaire):

- Q3** Do you consider your current overall order books to be...?
- + more than sufficient (above normal)
  - = sufficient (normal for the season)
  - not sufficient (below normal)
- Q4** How do you expect your firm's total employment to change over the next 3 months? It will...
- + increase
  - = remain unchanged
  - decrease

### 3.6.6. Economic Sentiment Indicator

The Economic Sentiment Indicator (ESI) is made up of the 15 individual components of the previously described confidence indicators. Explicit weights are allocated to the different sectors for the computation of the composite indicator:

- Industry: 40%
- Services: 30%
- Consumers: 20%
- Construction: 5%
- Retail trade: 5%

The given weights have been determined according to two criteria, namely “representativeness” of the sector in question and tracking performance vis-à-vis the reference variable. Corresponding to the broad scope of the ESI, the obvious reference variable is GDP growth, tracking the movements of the economy as a whole.

It is important to note that the above-mentioned weights are not directly applied to the five confidence indicators themselves but to their *standardised* individual component series. The prior standardisation is essential to make the individual component series comparable in terms of both their mean level and volatility before aggregation, especially when the components pertain to developments in different sectors of the economy. Otherwise, component series with relatively high characteristic amplitude would dominate the evolution of the composite indicator, i.e. the nominal weights would not reflect the factual contribution of each component to the profile of the composite indicator.<sup>15</sup>

Since the confidence indicators described above are made up of the same, but *non-standardised* component series, the ESI cannot precisely be derived from applying the given sector weights to the five confidence indicators. In fact, it can occasionally happen that, due to the influence of some more volatile component series, the sum of the (weighted) confidence indicators shows movements that are not reflected in the ESI, summarising the standardised components. In the same way, impulses from rather damped components that are not visible in the confidence indicators may potentially show up in the ESI.<sup>16</sup>

The exact calculation of the ESI on the basis of its component series can be summarised by the following three simple steps:

(1) For each component  $j = 1, \dots, 15$

$$Y_{j,t} = \frac{X_{j,t} - \bar{X}_j}{S_j} \quad \text{where} \quad \bar{X}_j = \frac{1}{T'} \sum_{t=1}^{T'} X_{j,t} \quad \text{and} \quad S_j = \sqrt{\frac{1}{T'-1} \sum_{t=1}^{T'} (X_{j,t} - \bar{X}_j)^2}$$

(2)  $Z_t = \frac{\sum_j w_j \cdot Y_{j,t}}{(\sum_j w_j)_t}$  where  $(\sum_j w_j)_t$  is the sum of the weights of the available series at time  $t$

$$(3) ESI_t = \left( \frac{Z_t - \bar{Z}}{S_Z} \right) \cdot 10 + 100 \quad \text{where} \quad \bar{Z} = \frac{1}{T'} \sum_{t=1}^{T'} Z_t \quad \text{and} \quad S_Z = \sqrt{\frac{1}{T'-1} \sum_{t=1}^{T'} (Z_t - \bar{Z})^2}$$

<sup>15</sup> For example, the long-term standard deviation of the components of the EU Economic Sentiment Indicator varies between 15.7 (question Q1 in the services sector) and 3.6 (question Q2 in the retail trade sector).

<sup>16</sup> Empirical evidence suggests that the impact of the (non-) standardisation of the component series on the tracking performance of the composite indicator is usually negligible.



The  $X_j$  variables represent the 15 components of the confidence indicators for industry (3 components), services (3), consumers (4), construction (2) and retail trade (3), as given in Sections 6.1 to 6.5 (seasonally adjusted balances).

The moments for standardisation (step 1) are computed over a frozen sample to avoid monthly revisions of the index. The starting point is January 2000<sup>17</sup>. The end-point of the sample, which is updated once a year in January<sup>18</sup>, corresponds, in any given year  $t$ , to December of the year  $t-1$ .

To compute the weighted average  $Z_t$  (step 2), the above-mentioned sector weights are divided by the number of opinion balances making up the related confidence indicator. So, for example, the three standardised balances relating to service confidence each receive a weight of 10%, adding up to the total services weight of 30%. As long as not all of the 15 components are available, the weighted sum of those series that are available is divided by the sum of the allocated weights.

In the last step (step 3), the resulting weighted average is scaled to have a long-term mean of 100 and a standard deviation of 10, where the same sample is used as for the standardisation of the individual components in step 1. Values greater than 100 indicate an above-average economic sentiment, whereas values below 100 indicate a below-average position. Assuming approximate normality, the imposed standard deviation of 10 implies that in about 68% of the cases the ESI will be within the range of 90 to 110.

The performance of the ESI, which summarises the attitudes and judgements of a large number of economic actors, should be compared with the performance of a reference variable which is also all-inclusive, recording movements in the economy as a whole. Hence, as mentioned previously, GDP growth is the obvious choice for testing the explanatory performance of the composite indicator.

### 3.6.7. Employment Expectations Indicator

The Employment Expectations Indicator (EEI)<sup>19</sup> is made up of four seasonally adjusted balances (in percentage points) which summarise managers' answers to a question about their employment plans in, respectively, the industry, services, retail trade and construction sector.

The exact wording of the question is:

How do you expect your firm's total employment to change over the next 3 months? It will...

- + increase
- = remain unchanged
- decrease

The question corresponds to **Q7** of the industry survey, **Q5** of the services survey, **Q5** of the retail trade survey and **Q4** of the construction survey (see Annex 2.5.1 for the complete questionnaire).

Before being summarised in one composite indicator, the four balance series are weighted so that the relative importance of each economic sector for overall employment is adequately reflected. To that

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<sup>17</sup> Since February 2020, the starting point of the standardisation window applied is 2000 since (i) this is in line with the construction of the Employment Expectations Indicator (EEI) and thus enhances the scope for meaningful comparisons of the two indicators across time and (ii) it ensures a higher degree of cross-country comparability than the previously applied standardisation sample (from 1990 onwards), which comprised prolonged periods in which survey data were not available for countries having accessed the EU since the 2000s.

<sup>18</sup> It should be noted that the long-term moments of the balance series are fairly stable due to their stationary nature so that updates in the sample considered for standardisation have only a very limited effect.

<sup>19</sup> For a presentation of the EEI, see the 2019-Q4 special topic of the [European Business Cycle Indicators](#) publication.

end, a time series of weights is created for every sector, reporting the ratio of the sector's<sup>20</sup> employment over total employment in all four sectors. The time series are calculated on the basis of annual Eurostat data starting in 2000. The final weight for each sector corresponds to the average value reported in the sector-specific time series. Every year in January, the weights are updated, taking on board newly released<sup>21</sup> employment data for the calculation of the above-described average.

The weights are applied to the four balance series, which are expressed in *standardised* form. The prior standardisation is essential to make the balance series comparable in terms of both their mean level and volatility before aggregation, especially since the series capture developments in different sectors of the economy. If standardisation was skipped, balance series with a relatively high characteristic amplitude would dominate the evolution of the composite indicator, i.e. the nominal weights would not reflect the factual contribution of each component to the profile of the composite indicator.<sup>22</sup>

The exact calculation of the EEI on the basis of its four component series can be summarised by the following three simple steps:

(1) For each component  $j = 1, \dots, 4$

$$Y_{j,t} = \frac{X_{j,t} - \bar{X}_j}{S_j} \text{ where } \bar{X}_j = \frac{1}{T'} \sum_{t=1}^{T'} X_{j,t} \text{ and } S_j = \sqrt{\frac{1}{T'-1} \sum_{t=1}^{T'} (X_{j,t} - \bar{X}_j)^2}$$

(2)  $Z_t = \sum_j w_j \cdot Y_{jt}$  where  $w_j$  is the weight of series  $j$  as described above and  $\sum_j w_j$  is equal to 1 by construction.

$$(3) EEI_t = \left( \frac{Z_t - \bar{Z}}{S_z} \right) \cdot 10 + 100 \text{ where } \bar{Z} = \frac{1}{T'} \sum_{t=1}^{T'} Z_t \text{ and } S_z = \sqrt{\frac{1}{T'-1} \sum_{t=1}^{T'} (Z_t - \bar{Z})^2}$$

The  $X_j$  variables represent the four balance series. The moments for standardisation (step 1) are computed over a frozen sample to avoid monthly revisions of the index. To ensure consistency with the calculation of the sectoral weights, the starting point of the sample considered is 2000 or, in the case of countries with shorter employment expectation series, the first year in which employment expectations are available for all four business sector. The end-point of the sample, which is updated once a year<sup>23</sup> in January, corresponds, in any given year  $t$ , to December of the year  $t-1$ .

Once the weighted average of all four standardised balance series is computed (step 2), the resulting time-series is scaled to have a long-term mean of 100 and a standard deviation of 10 (step 3). The sample considered for standardisation is the same one as in step 1. Values greater than 100 indicate that managers' employment expectations are high by historical standards, while the opposite holds true for values below 100. Assuming approximate normality, the imposed standard deviation of 10 implies that in about 68% of the cases the EEI will be within the range of 90 to 110.

Considering that it summarises the employment plans of managers across four major economic sectors, the performance of the EEI in anticipating/tracking developments in official statistical data should best be assessed by comparing its evolution to developments in total (quarter-on-quarter) employment growth.

<sup>20</sup> The sectors are defined as covering the following headings of the NACE Rev. 2 classification: headings B to E (industry), headings H to N and R to S (services), heading G (retail trade), heading F (construction).

<sup>21</sup> The employment data are released with a significant time-lag so that an update in January of year  $t$  adds a new data-point in year  $t-2$ .

<sup>22</sup> The long-term standard deviations of the four balance series feeding into the EA Employment Expectations Indicator vary between 5.0 (question Q5 in the retail trade sector) and 11.1 (question Q4 in the construction sector).

<sup>23</sup> It should be noted that the long-term moments of the balance series are fairly stable due to their stationary nature so that updates in the sample considered for standardisation have only a very limited effect.

### 3.6.8. Business Climate Indicator

The Business Climate Indicator (BCI) is calculated in order to receive a timely composite indicator for the manufacturing sector in the euro area. The indicator uses, as input series, five balances of opinion from the industry survey: production trends in recent months, order books, export order books, stocks and production expectations. The BCI therefore deviates from the industrial confidence indicator, which is based on only three input series. Also, the method to construct the BCI is different from that of the confidence indicator. The BCI is based on the notion that each of the five component questions can be represented by a *common* factor that summarises the underlying cyclical situation at a particular moment in time and by a *specific* factor that applies to the question only. The basic idea of this division is to separate out the information that is common to all series from idiosyncratic movements in a specific series. The BCI is then defined as the common factor, while the specific factors are left out. Being the common factor extracted from five monthly industry questions, the BCI is supposed to move contemporaneously with overall industrial activity in the euro area.

More generally, factor analysis is a class of statistical methods used to summarise a set of variables by constructing a few “common factors” related to all of the variables and “specific factors” related to each individual variable only. It therefore represents a formalisation of Burns and Mitchell’s (1946) notion that business cycles represent co-movements in a set of economic time series.

The methodology is based on very classical principles. A set of  $p$  observed variables (balances of opinion) are summarised by a small number  $k < p$  of latent variables called common factors. The underlying model supposes that each of the  $p$  observed variables results from the combination of both a small number of *common factors*  $F_j$  and an idiosyncratic component  $u_i$

$$z_{it} = l_{i1}F_{1t} + \dots + l_{ik}F_{kt} + u_{it} \quad , i = 1, \dots, p$$

where  $z$  denotes the value of the  $i^{\text{th}}$  standardised observed variable at time  $t$ . The term

$$\chi_{it} \equiv z_{it} - u_{it} = l_{i1}F_{1t} + \dots + l_{ik}F_{kt}$$

defines the *common component* of variable  $i$ , and is itself driven by the  $k$  common factors.

The factors are supposed to be uncorrelated with each other and with the idiosyncratic factors. The latter are also uncorrelated with each other. The *loadings*  $l_{ij}$ ,  $j=1, \dots, k$ , give the individual correlations of the  $k$  common factors with the  $i^{\text{th}}$  variable. The squared loadings  $l_{ij}^2$  provide the share of variance of variable  $i$  explained by factor  $j$ . Adding them over the  $k$  factors results in the *communality* of variable  $i$ , representing the share of variance explained by all of the extracted factors.<sup>24</sup>

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<sup>24</sup> In the case of the BCI,  $k$  is set to 1. Additional information on how the Business Climate Indicator is constructed can be found on the webpage: [http://ec.europa.eu/economy\\_finance/db\\_indicators/surveys/documents/studies/bci\\_presentation\\_paper.pdf](http://ec.europa.eu/economy_finance/db_indicators/surveys/documents/studies/bci_presentation_paper.pdf)

## 4. DATA DISSEMINATION AND PUBLICATION

### 4.1. Publication of survey results

The detailed Business and Consumer Survey results are published two working days<sup>25</sup> before the end of each month by means of a press release and are sent by e-mail to a selected group of news agencies.

The press release reports the detailed BCS results plus the sectoral confidence indicators, the Economic Sentiment Indicator (ESI) and the Employment Expectations Indicator (EEI). It is divided into two parts: a first part with comments on the main results of the surveys and a second part with detailed tables showing the results.

The results of the consumer confidence indicator at the aggregate EU and euro area levels are published in a Flash release one week ahead of the detailed consumer survey results (i.e. around the 20<sup>th</sup> of each month).

All press releases and a publication calendar are available on DG ECFIN's website at:

[http://ec.europa.eu/economy\\_finance/db\\_indicators/surveys/index\\_en.htm](http://ec.europa.eu/economy_finance/db_indicators/surveys/index_en.htm).

Furthermore, all the data reported in the press releases plus additional data (long-time series, non-seasonally adjusted sector series, seasonally adjusted branch data, detailed data by answer category) are freely downloadable (excel files) from:

[http://ec.europa.eu/economy\\_finance/db\\_indicators/surveys/time\\_series/index\\_en.htm](http://ec.europa.eu/economy_finance/db_indicators/surveys/time_series/index_en.htm).

The results of the quarterly survey in the manufacturing sector are reported in the press release of the first month of the quarter (i.e. January, April, July and October). The results of the bi-annual survey on investments are reported in the April and November press releases.

At the beginning of January, April, July and October, the Commission publishes a quarterly report, the 'European Business Cycle Indicators' (EBCI). Focusing on major developments in survey data from a quarterly perspective, it allows for clearer messages on changes in trends (which are usually not detectable on a month-by-month basis) and is therefore a valuable complement to the monthly press releases. Apart from the standard section, the report also includes an analytical 'highlight section' presenting topical research using survey data from the BCS Programme. The fourth quarter issue of the EBCI is also used to present and analyse the results of the October/November Investment surveys in some detail. The EBCI publication is available on DG ECFIN's website at:

[http://ec.europa.eu/economy\\_finance/publications/cycle\\_indicators/index\\_en.htm](http://ec.europa.eu/economy_finance/publications/cycle_indicators/index_en.htm)

### 4.2. Metadata

As already mentioned, the harmonised business and consumer surveys are carried out in a decentralised manner by individual institutes in the Member States. Notwithstanding the harmonised schedule and the

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<sup>25</sup> The December results are published in early January of the following year.

common principle of representative sampling, the individual institutes are responsible for determining their sampling frame, sampling and survey methods.

All the information concerning the questionnaires in the language of the respective Member state, the methodology used in each country for each survey as well as other useful information on the national institutes conducting the surveys (incl. contact persons) is available in the metadata section of DG ECFIN's BCS website at:

[http://ec.europa.eu/economy\\_finance/db\\_indicators/surveys/questionnaires/index\\_en.htm](http://ec.europa.eu/economy_finance/db_indicators/surveys/questionnaires/index_en.htm)

[http://ec.europa.eu/economy\\_finance/db\\_indicators/surveys/metadata/index\\_en.htm](http://ec.europa.eu/economy_finance/db_indicators/surveys/metadata/index_en.htm)

[http://ec.europa.eu/economy\\_finance/db\\_indicators/surveys/partner\\_institutes/index\\_en.htm](http://ec.europa.eu/economy_finance/db_indicators/surveys/partner_institutes/index_en.htm).

## ANNEXES

## ANNEX 1

### DAINTIES – DESCRIPTION OF THE SEASONAL ADJUSTMENT METHOD

#### 1. GENERAL FEATURES

The Dainties method for the elimination of seasonal variations is based mainly on the use of “filters”. Filters are made up of sets of weightings that are applied to the series in the same way as for the computation of weighted moving averages. These filters have properties determined in advance on the basis of the conventional assumption of the breakdown of the series into three components, known respectively as seasonal, trend and irregular. More specifically, it is assumed that for any point in the series, there is a certain “vicinity” (that is a part of the series containing the point analysed) which can be broken down according to a specific model. The models used in Dainties are based on three hypotheses. These are: the trend can be represented by a cubic series, the seasonal component by a stationary periodic series and the irregular component by a random series of sum zero. Using the least squared method, it is then possible to obtain an optimum breakdown that minimises the square of the irregular component within a local regression approach. A Dainties filter can be regarded as an operator that, when applied to the vicinity of a data point, supplies the value of the seasonal component directly in accordance with the above model. Subtracting this value from the original observation yields the adjusted figure. The local modelling of the series allows the seasonal component to evolve slowly over time.

The theoretical analysis shows that filters having such properties do not depend on a specific series but merely on the length of the model (number of data points in the local regression). This means that that they can be calculated in advance, simplifying greatly the practical execution of the adjustments.<sup>26</sup>

The conventional moving averages are special cases of filters of this type in which the observation processed is generally situated in the centre of its vicinity. Complex, often iterative, procedures are then used to adjust the data points at the end of the series and these procedures give rise to subsequent revisions. On the other hand, the filters used by Dainties to adjust the current data point are applied to a vicinity that contains only earlier points and therefore will not be modified by the arrival of new observations.

Experience shows that some economic statistics series are correctly described by a breakdown into additive components: for such series, the seasonal component is independent from the trend. For other series, however, the size of the seasonal component tends to be proportional to the level of the trend; this is known as the multiplicative behaviour. In this case, a better adjustment is obtained by applying the filter to a logarithmic transformation of the series. However, there are also series whose behaviour varies in time, which means that they are better described at certain times by an additive model and at other times by a multiplicative model.

Dainties allows correct processing of such series and, more generally, optimum use of various explanatory models. It consists of applying three additive models and three multiplicative models to a series. For each current observation, the quality of the adjustment obtained is assessed by calculating the variance of the figure adjusted by reference to a trend, in a limited area. Finally, the various

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<sup>26</sup> For a technical description of the Dainties procedure, see B. Fischer (1995), “Decomposition of Time Series - Comparing Different Methods in Theory and Practice“, Eurostat working group document, available at: <http://ec.europa.eu/comm/eurostat/research/index.htm?http://europa.eu.int/en/comm/eurostat/research/noris4/&1>.

results are weighted by the inverse of these variances. In practice, the choice of models is restricted in some cases and a degree of priority is given to additive models.

## 2. ADJUSTMENT BY DAINTIES

The length of the moving filters (models) are  $(3p+1)$ ,  $(4p+1)$  and  $(5p+1)$ , where  $p$  is the number of observations per year. The lengths of the various filters are:

<b>Frequency</b>	<b>Monthly</b>	<b>Quarterly</b>	<b>Half-yearly</b>
$(5p+1)$	61	21	11
$(4p+1)$	49	17	9
$(3p+1)$	37	13	7

Depending on the length of the series and on the presence of negative values, the set of appropriate models are selected. Let  $L3$ ,  $L4$  and  $L5$  denote the length in years of a series and let  $M3$ ,  $M4$  and  $M5$  denote a three-year, a four-year and a five-year model, respectively. Finally, a “+” denotes an additive model and a “\*” denotes a multiplicative model. The models calculated are given in the table below:

<b>Conditions</b>	<b>Presence of negative figures</b>	<b>Models selected</b>
<b>Length of series</b>		
$n < 13$		none (rejection)
$L3 \leq n < L4$	yes	$M3+$
$L3 \leq n < L4$	no	$M3+$ , $M3^*$
$L4 \leq n < L5$	yes	$M3+$ , $M4+$
$L4 \leq n < L5$	no	$M3+$ , $M4+$ , $M3^*$ , $M4^*$
$L5 \leq n$	yes	$M3+$ , $M4+$ , $M5+$
$L5 \leq n$	no	$M3+$ , $M4+$ , $M5+$ , $M3^*$ , $M4^*$ , $M5^*$

A seasonally adjusted series is calculated for each of the selected models. The series for each model is then evaluated according to its “smoothness”: if a series exhibits relatively high variation, it is assigned a relatively small weight. At this stage, the multiplicative model(s), if selected, are only taken into account if their weight(s) are higher than 0.8 times the average weight(s) for the additive model(s). The final seasonally adjusted values are then obtained as a weighted average of the series from the models considered.



## ANNEX 2

### QUESTIONNAIRES AND CLASSIFICATIONS

#### 1. THE JOINT HARMONISED EU INDUSTRY SURVEY

##### 1.1. Industry survey - Questionnaire

###### Monthly questions

- Q1** How has your production developed over the past 3 months? It has...
- + increased
  - = remained unchanged
  - decreased
- Q2** Do you consider your current overall order books to be...?
- + more than sufficient (above normal)
  - = sufficient (normal for the season)
  - not sufficient (below normal)
- Q3** Do you consider your current export order books to be...?
- + more than sufficient (above normal)
  - = sufficient (normal for the season)
  - not sufficient (below normal)
- Q4** Do you consider your current stock of finished products to be...?
- + too large (above normal)
  - = adequate (normal for the season)
  - too small (below normal)
- Q5** How do you expect your production to develop over the next 3 months? It will...
- + increase
  - = remain unchanged
  - decrease
- Q6** How do you expect your selling prices to change over the next 3 months?  
They will...
- + increase
  - = remain unchanged
  - decrease

**Q7** How do you expect your firm's total employment to change over the next 3 months? It will...

- + increase
- = remain unchanged
- decrease

**Quarterly questions (January, April, July and October)**

**Q8** What main factors are currently limiting your production?

- none
- insufficient demand
- shortage of labour force
- shortage of material and/or equipment
- financial constraints
- other factors

**Q9** 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

**Q10** How many months of production are assured by your current overall order books?  
Our production is assured for  months

**Q11** How have your orders developed over the past 3 months?  
They have...

- + increased
- = remained unchanged
- decreased

**Q12** How do you expect your export orders to develop over the next 3 months?  
They will...

- + - increase
- = - remain unchanged
- - decrease

**Q13** At what capacity is your company currently operating (as a percentage of full capacity)?

The company is currently operating at  % of full capacity.

**Q14** How has your competitive position on the domestic market developed over the past 3 months? It has...

- + improved
- = remained unchanged
- deteriorated

**Q15** How has your competitive position on foreign markets inside the EU developed over the past 3 months? It has...

- + improved
- = remained unchanged
- deteriorated

**Q16** How has your competitive position on foreign markets outside the EU developed over the past 3 months? It has...

- + improved
- = remained unchanged
- deteriorated

## 1.2. Industry survey - Classification of sectors (NACE Rev. 2) and allocation of NACE headings to main industrial groupings

NACE CODE	DESCRIPTION	MIG
<b>10</b>	<b>Manufacture of food products</b>	
10.1	Processing and preserving of meat and production of meat products	CNDU
10.2	Processing and preserving of fish, crustaceans and molluscs	CNDU
10.3	Processing and preserving of fruit and vegetables	CNDU
10.4	Manufacture of vegetable and animal oils and fats	CNDU
10.5	Manufacture of dairy products	CNDU
10.6	Manufacture of grain mill products, starches and starch products	INTM
10.7	Manufacture of bakery and farinaceous products	CNDU
10.8	Manufacture of other food products	CNDU
10.9	Manufacture of prepared animal feeds	INTM
<b>11</b>	<b>Manufacture of beverages</b>	<b>CNDU</b>
<b>12</b>	<b>Manufacture of tobacco products</b>	<b>CNDU</b>
<b>13</b>	<b>Manufacture of textiles</b>	
13.1	Preparation and spinning of textile fibres	INTM
13.2	Weaving of textiles	INTM
13.3	Finishing of textiles	INTM
13.9	Manufacture of other textiles	CNDU
<b>14</b>	<b>Manufacture of wearing apparel</b>	<b>CNDU</b>
<b>15</b>	<b>Manufacture of leather and related products</b>	<b>CNDU</b>
<b>16</b>	<b>Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials</b>	<b>INTM</b>
<b>17</b>	<b>Manufacture of paper and paper products</b>	<b>INTM</b>
<b>18</b>	<b>Printing and reproduction of recorded media</b>	<b>CNDU</b>
<b>19</b>	<b>Manufacture of coke and refined petroleum products</b>	
<b>20</b>	<b>Manufacture of chemicals and chemical products</b>	
20.1	Manufacture of basic chemicals, fertilisers and nitrogen compounds, plastic and synthetic rubber in primary forms	INTM
20.2	Manufacture of pesticides and other agrochemical products	INTM
20.3	Manufacture of paints, varnishes and similar coatings, printing ink and mastics	INTM
20.4	Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations	CNDU
20.5	Manufacture of other chemical products	INTM
20.6	Manufacture of man-made fibres	INTM
<b>21</b>	<b>Manufacture of basic pharmaceutical products and pharmaceutical preparations</b>	<b>CNDU</b>
<b>22</b>	<b>Manufacture of rubber and plastic products</b>	<b>INTM</b>
<b>23</b>	<b>Manufacture of other non-metallic mineral products</b>	<b>INTM</b>
<b>24</b>	<b>Manufacture of basic metals</b>	<b>INTM</b>
<b>25</b>	<b>Manufacture of fabricated metal products, except machinery and equipment</b>	
25.1	Manufacture of structural metal products	INVE
25.2	Manufacture of tanks, reservoirs and containers of metal	INVE
25.3	Manufacture of steam generators, except central heating hot water boilers	INVE
25.4	Manufacture of weapons and ammunition	INVE
25.5	Forging, pressing, stamping and roll-forming of metal; powder metallurgy	INTM
25.6	Treatment and coating of metals; machining	INTM
25.7	Manufacture of cutlery, tools and general hardware	INTM
25.9	Manufacture of other fabricated metal products	INTM
<b>26</b>	<b>Manufacture of computer, electronic and optical products</b>	
26.1	Manufacture of electronic components and boards	INTM

	26.2	Manufacture of computers and peripheral equipment	INVE
	26.3	Manufacture of communication equipment	INVE
	26.4	Manufacture of consumer electronics	CDUR
	26.5	Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks	INVE
	26.6	Manufacture of irradiation, electromedical and electrotherapeutic equipment	INVE
	26.7	Manufacture of optical instruments and photographic equipment	CDUR
	26.8	Manufacture of magnetic and optical media	INTM
<b>27</b>		<b>Manufacture of electrical equipment</b>	
	27.1	Manufacture of electric motors, generators, transformers and electricity distribution and control apparatus	INTM
	27.2	Manufacture of batteries and accumulators	INTM
	27.3	Manufacture of wiring and wiring devices	INTM
	27.4	Manufacture of electric lighting equipment	INTM
	27.5	Manufacture of domestic appliances	CDUR
	27.9	Manufacture of other electrical equipment	INTM
<b>28</b>		<b>Manufacture of machinery and equipment n.e.c.</b>	<b>INVE</b>
<b>29</b>		<b>Manufacture of motor vehicles, trailers and semi-trailers</b>	<b>INVE</b>
<b>30</b>		<b>Manufacture of other transport equipment</b>	
	30.1	Building of ships and boats	INVE
	30.2	Manufacture of railway locomotives and rolling stock	INVE
	30.3	Manufacture of air and spacecraft and related machinery	INVE
	30.4	Manufacture of military fighting vehicles	INVE
	30.9	Manufacture of transport equipment n.e.c.	CDUR
<b>31</b>		<b>Manufacture of furniture</b>	<b>CDUR</b>
<b>32</b>		<b>Other manufacturing</b>	
	32.1	Manufacture of jewellery, bijouterie and related articles	CDUR
	32.2	Manufacture of musical instruments	CDUR
	32.3	Manufacture of sports goods	CNDU
	32.4	Manufacture of games and toys	CNDU
	32.5	Manufacture of medical and dental instruments and supplies	INVE
	32.9	Manufacturing n.e.c.	CNDU
<b>33</b>		<b>Repair and installation of machinery and equipment</b>	<b>INVE</b>
<b>CDUR</b>		<b>Durable consumer goods</b>	
<b>CNDU</b>		<b>Non-durable consumer goods</b>	
<b>FOBE</b>		<b>Food and beverages industry (10.1-10.5, 10.7-10.8, 11, 12)</b>	
<b>CONS</b>		<b>Consumer goods (CDUR+CNDU)</b>	
<b>INTM</b>		<b>Intermediate goods (excluding mining and quarrying)</b>	
<b>INVE</b>		<b>Investment goods</b>	
<b>TOTA</b>		<b>Total manufacturing = CONS + INTM + INVE + 19</b>	

## 2. THE JOINT HARMONISED EU SERVICES SURVEY

### 2.1. Services survey - Questionnaire

#### Monthly questions

- Q1** How has your business situation developed over the past 3 months? It has...
- + improved
  - = remained unchanged
  - deteriorated
- Q2** How has demand (turnover) for your company's services changed over the past 3 months? It has...
- + increased
  - = remained unchanged
  - decreased
- Q3** How do you expect the demand (turnover) for your company's services to change over the next 3 months? It will...
- + increase
  - = remain unchanged
  - decrease
- Q4** How has your firm's total employment changed over the past 3 months? It has...
- + increased
  - = remained unchanged
  - decreased
- Q5** How do you expect your firm's total employment to change over the next 3 months? It will...
- + increase
  - = remain unchanged
  - decrease
- Q6** How do you expect the prices you charge to change over the next 3 months? They will...
- + increase
  - = remain unchanged
  - decrease

Quarterly question (January, April, July and October)

**Q7** What main factors are currently limiting your business?

- none
- insufficient demand
- shortage of labour force
- shortage of space and/or equipment
- financial constraints
- other factors

**Q8** If the demand expanded, could you increase your volume of activity with your present resources? Yes –No

If so, by how much? ...%

## 2.2. Services survey - Classification of sectors (NACE Rev. 2)

<b>NACE CODE</b>	<b>DESCRIPTION</b>
<b>H</b>	<b>Transportation and storage</b>
<b>49</b>	Land transport and transport via pipelines
<b>50</b>	Water transport
<b>51</b>	Air transport
<b>52</b>	Warehousing and support activities for transportation
<b>53</b>	Postal and courier activities
<b>I</b>	<b>Accommodation and food service activities</b>
<b>55</b>	Accommodation
<b>56</b>	Food and beverage service activities
<b>J</b>	<b>Information and communication</b>
<b>58</b>	Publishing activities
<b>59</b>	Motion picture, video and television programme production, sound recording and music publishing activities
<b>60</b>	Programming and broadcasting activities
<b>61</b>	Telecommunication
<b>62</b>	Computer programming, consultancy and related activities
<b>63</b>	Information service activities
<b>K</b>	<b>Financial and insurance activities</b>
<b>64</b>	Financial service activities, except insurance and pension funding
<b>65</b>	Insurance, reinsurance and pension funding, except compulsory social security
<b>66</b>	Activities auxiliary to financial services and insurance activities
<b>L</b>	<b>Real estate activities</b>
<b>68</b>	
<b>M</b>	<b>Professional, scientific and technical activities</b>
<b>69</b>	Legal and accounting activities
<b>70</b>	Activities of head offices; management consultancy activities



<b>71</b>	Architectural and engineering activities; technical testing and analysis
<b>72</b>	Scientific research and development
<b>73</b>	Advertising and market research
<b>74</b>	Other professional, scientific and technical activities
<b>75</b>	Veterinary activities
<b>N</b>	<b>Administrative and support service activities</b>
<b>77</b>	Rental and leasing activities
<b>78</b>	Employment activities
<b>79</b>	Travel agency, tour operator and other reservation service and related activities
<b>80</b>	Security and investigation activities
<b>81</b>	Services to buildings and landscape activities
<b>82</b>	Office administrative, office support and other business support activities
<b>R</b>	<b>Arts, entertainment and recreation</b>
<b>90</b>	Creative, arts and entertainment activities
<b>91</b>	Libraries, archives, museums and other cultural activities
<b>92</b>	Gambling and betting activities
<b>93</b>	Sports activities and amusement and recreation activities
<b>S</b>	<b>Other service activities</b>
<b>94</b>	Activities of membership organisations
<b>95</b>	Repair of computers and personal and household goods
<b>96</b>	Other personal service activities
<b>TOTS</b>	Total

### 3. THE JOINT HARMONISED EU CONSUMER SURVEY

#### 3.1. Consumer survey - Questionnaire

##### Monthly questions

**Q1** How has the financial situation of your household changed over the last 12 months? It has...

- ++ got a lot better
- + got a little better
- = stayed the same
- got a little worse
- got a lot worse
- N don't know.

**Q2** How do you expect the financial position of your household to change over the next 12 months? It will...

- ++ get a lot better
- + get a little better
- = stay the same
- get a little worse
- get a lot worse
- N don't know.

**Q3** How do you think the general economic situation in the country has changed over the past 12 months? It has...

- ++ got a lot better
- + got a little better
- = stayed the same
- got a little worse
- got a lot worse
- N don't know.

**Q4** How do you expect the general economic situation in this country to develop over the next 12 months? It will...

- ++ get a lot better
- + get a little better
- = stay the same
- get a little worse
- get a lot worse
- N don't know.

**Q5** How do you think that consumer prices have developed over the last 12 months? They have...

- + + risen a lot
- + risen moderately
- = risen slightly
- stayed about the same
- - fallen
- N don't know.

**Q51** If question 5 was answered by 1, 2, 3 or 5:

By how many per cent do you think that consumer prices have gone up/down over the past 12 months? (Please give a single figure estimate).

Consumer prices have increased by  % / decreased by  %.

**Q6** By comparison with the past 12 months, how do you expect that consumer prices will develop in the next 12 months? They will...

- + + increase more rapidly
- + increase at the same rate
- = increase at a slower rate
- stay about the same
- - fall
- N don't know.

**Q61** If question 6 was answered by 1, 2, 3 or 5:

By how many per cent do you expect consumer prices to go up/down change in the next 12 months? (Please give a single figure estimate).

Consumer prices will increase by  % / decrease by  %.

**Q7** How do you expect the number of people unemployed in this country to change over the next 12 months? The number will...

- + + increase sharply
- + increase slightly
- = remain the same
- fall slightly
- - fall sharply
- N don't know.

**Q8** In view of the general economic situation, do you think that now it is the right moment for people to make major purchases such as furniture, electrical/electronic devices, etc.?

- ++ yes, it is the right moment now
- = it is neither the right moment nor the wrong moment
- no, it is not the right moment now
- N don't know.

**Q9** Compared to the past 12 months, do you expect to spend more or less money on major purchases (furniture, electrical/electronic devices, etc.) over the next 12 months? I will spend...

- ++ much more
- + a little more
- = about the same
- a little less
- much less
- N don't know.

**Q10** In view of the general economic situation, do you think that now is...?

- ++ a very good moment to save
- + a fairly good moment to save
- not a good moment to save
- a very bad moment to save
- N don't know.

**Q11** Over the next 12 months, how likely is it that you save any money?

- ++ very likely
- + fairly likely
- not likely
- not at all likely
- N don't know.

**Q12** Which of these statements best describes the current financial situation of your household?

- ++ we are saving a lot
- + we are saving a little
- = we are just managing to make ends meet on our income
- we are having to draw on our savings
- we are running into debt
- N don't know.

Quarterly questions (January, April, July and October)

**Q13** How likely are you to buy a car over the next 12 months?

- ++ very likely
- + fairly likely
- not likely
- not at all likely
- N don't know.

**Q14** Are you planning to buy or build a home over the next 12 months (to live in yourself, for a member of your family, as a holiday home, to let etc.)?

- ++ yes, definitely
- + possibly
- probably not
- no
- N don't know.

**Q15** How likely are you to spend any large sums of money on home improvements or renovations over the next 12 months?

- ++ very likely
- + fairly likely
- not likely
- not at all likely
- N don't know.

### 3.2. Consumer survey - Categories

#### A. Income of the household

- 1st Quartile
- 2nd Quartile
- 3rd Quartile
- 4th Quartile

#### B. Occupation of respondent

- Managers and professionals (ISCO-08: 11 to 14 and 21 to 26)
- Technicians and associate professionals (ISCO-08: 31 to 35)
- Clerical and support workers, services and sales workers (ISCO-08: 41 to 44 and 51 to 54)
- Skilled agricultural, forestry and fishery workers; craft and related trade workers (ISCO-08: 61 to 63 and 71 to 75)
- Plant and machine operators, assemblers and elementary occupations (ISCO-08: 81 to 83 and 91 to 96)

**Total employed** (ISCO-08: 11 to 96)

- Unemployed
- In retirement or early retirement/widow/widower receiving pension after partner died /permanently disabled or chronically ill
- Other occupations (student or further training experience or unpaid work experience/ fulfilling domestic task/housekeeper or child care/in compulsory military or community service/other)

**Total unemployed and other occupations**

#### C. Working regime of respondent

- Work full-time
- Work part-time

#### D. Education of respondent

- Primary
- Secondary
- Further

#### E. Age of respondent

- 16-29
- 30-49
- 50-64
- 65+

#### F. Sex of respondent

- Male
- Female

## 4. THE JOINT HARMONISED EU RETAIL TRADE SURVEY

### 4.1. Retail trade survey - Questionnaire

#### Monthly questions

- Q1** How has (have) your business activity (sales) developed over the past 3 months?  
It has... (They have...)
- + improved (increased)
  - = remained unchanged
  - deteriorated (decreased)
- Q2** Do you consider the volume of stock you currently hold to be...?
- + too large (above normal)
  - = adequate (normal for the season)
  - too small (below normal)
- Q3** How do you expect your orders placed with suppliers to change over the next 3 months?  
They will...
- + increase
  - = remain unchanged
  - decrease
- Q4** How do you expect your business activity (sales) to change over the next 3 months? It  
(They) will...
- + improve (increase)
  - = remain unchanged
  - deteriorate (decrease)
- Q5** How do you expect your firm's total employment to change over the next 3 months? It will...
- + increase
  - = remain unchanged
  - decrease
- Q6** How do you expect the prices you charge to change over the next 3 months?  
They will...
- + increase
  - = remain unchanged
  - decrease

#### 4.2. Retail trade survey - Classification of sectors (NACE Rev. 2)

NACE CODE	Grouping	DESCRIPTION
<b>45</b>		<b>Wholesale and retail trade and repair of motor vehicles and motorcycles</b>
	MVS	Sale of motor vehicles (45.1)
	MVRM	Maintenance of motor vehicles and sale of accessories (45.2 - 45.4)
<b>47</b>		<b>Retail trade, except of motor vehicles and motorcycles</b>
	FBT	Retail sale of Food, Beverages, Tobacco (47.1, 47.2, 47.8)
	FUEL	Retail sale of automotive fuel (47.3)
	OTHERS	Retail sale of other goods (47.4 - 47.7, 47.9)
<b>TOTR</b>		<b>45 + 47</b>



## 5. THE JOINT HARMONISED EU CONSTRUCTION SURVEY

### 5.1. Construction survey - Questionnaire

#### Monthly questions

**Q1** How has your building activity developed over the past 3 months? It has...

- + increased
- = remain unchanged
- decreased

**Q2** What main factors are currently limiting your building activity?

- none
- insufficient demand
- weather conditions
- shortage of labour force
- shortage of material and/or equipment
- financial constraints
- other factors

**Q3** Do you consider your current overall order books to be...?

- + more than sufficient (above normal)
- = sufficient (normal for the season)
- not sufficient (below normal)

**Q4** How do you expect your firm's total employment to change over the next 3 months? It will...

- + increase
- = remain unchanged
- decrease

**Q5** How do you expect the prices you charge to change over the next 3 months?  
They will...

- + increase
- = remain unchanged
- decrease

#### Quarterly question (January, April, July and October)

**Q6** Assuming normal working hours, about how many months' work is accounted for by the work in hand and the work already contracted for?

Number of months: □□.□

## 5.2. Construction survey - Classification of sectors (NACE Rev. 2)

<b>NACE CODE</b>	<b>DESCRIPTION</b>
<b>41</b>	<b>Construction of buildings</b>
<b>42</b>	<b>Civil engineering</b>
<b>43</b>	<b>Specialised construction activities</b>
<b>TOTF</b>	<b>Total construction</b>

## 6. THE JOINT HARMONISED EU INVESTMENT SURVEY

### 6.1. Investment survey - Questionnaire

March/April survey

#### **Investment plans:**

**Q1** State percentage change in investment last year (t-1) on investment two years ago (t-2):  
□□□.□ %

**Q2** State percentage change in investment this year (t) on investment last year (t-1):  
□□□.□ %

October/November survey

#### **Investment plans:**

**Q1** State percentage change in investment this year (t) on investment last year (t-1):  
□□□.□ %

**Q2** State percentage change in investment next year (t+1) on investment this year (t):  
□□□.□ %

#### **Structure of the investment:**

Investment carried out this year and planned investment for next year is, or will be, of the following kind (choose the appropriate category or categories):

- Replacement of worn-out plant or equipment
- Extension of production capacity
- Investment designed to streamline production
- Other investment objectives (pollution control, safety, etc.)

**Factors influencing investment:** for this year (t) and next year (t + 1)

- **Demand**

This heading covers the capacity utilisation rate and sales prospects. The degree of certainty as to how these variables will change is likely to be as relevant as the change itself.

- + + very stimulating
- + stimulating
- = no influence
- limiting
- - very limiting
- N no answer

- **Financial resources or expected profits**

This heading covers the availability of resources for investment (and their cost) together with the return on investment and the lack of opportunities for the company to use its resources more profitably than by investment (notably by purely financial operations).

- + + very stimulating
- + stimulating
- = no influence
- limiting
- - very limiting
- N no answer

- **Technical factors**

The main ones are technological developments, the availability of labour and its attitude towards the new technologies, and the technical conditions set by the public authorities before they grant the investment permit.

- + + very stimulating
- + stimulating
- = no influence
- limiting
- - very limiting
- N no answer

- **Other factors**

This may include the policy of the public authorities, notably with regard to taxation, and whether or not production can be transferred abroad.

- + + very stimulating
- + stimulating
- = no influence
- limiting
- - very limiting
- N no answer

## 6.2. Investment survey - Classification by sectors (NACE Rev.2) and by size of firms

<b>29</b>	Manufacture of motor vehicles, trailers and semi-trailers
<b>CDUR</b>	Durable consumer goods
<b>CNDU</b>	Non-durable consumer goods
<b>FOBE</b>	Food and beverages industry (10.1-10.5, 10.7-10.8, 11, 12)
<b>CONS</b>	Consumer goods (CDUR+CNDU)
<b>INTM</b>	Intermediate goods (excluding mining and quarrying)
<b>INVE</b>	Investment goods (includes 29)
<b>SIZ1</b>	Businesses employing fewer than 50 people
<b>SIZ2</b>	Businesses employing 50-249 people
<b>SIZ3</b>	Businesses employing 250-499 people
<b>SIZ4</b>	Businesses employing 500 people or more
<b>SIZ5</b>	Businesses employing fewer than 250 people
<b>SIZ6</b>	Businesses employing 250 people or more
<b>TOTA</b>	Total manufacturing industry = CONS + INTM + INVE + 19

## 7. THE EU FINANCIAL SERVICES SURVEY

### 7.1. Financial services sector survey - Questionnaire

#### Monthly questions

**Q1** How has your business situation developed over the past 3 months? It has...

- + improved
- = remained unchanged
- deteriorated

**Q2** How has demand (turnover) for your company's services changed over the past 3 months? It has...

- + increased
- = remained unchanged
- decreased

**Q3** How do you expect the demand (turnover) for your company's services to change over the next 3 months? It will...

- + increase
- = remain unchanged
- decrease

**Q4** How has your firm's total employment changed over the past 3 months? It has...

- + increased
- = remained unchanged
- decreased

**Q5** How do you expect your firm's total employment to change over the next 3 months? It will...

- + increase
- = remain unchanged
- decrease

#### Quarterly questions (January, April, July and October)

**Q10** How has your operating income developed over the last 3 months? It has...

- + increased
- = remained unchanged
- decreased

**Q20** How do you expect your operating income to develop over the next 3 months?  
It will...

- + increase
- = remain unchanged
- decrease

**Q30** How have your operating expenses developed over the last 3 months? They have...

- + increased
- = remained unchanged
- decreased

**Q40** How do you expect your operating expenses to develop over the next 3 months?  
They will...

- + increase
- = remain unchanged
- decrease

**Q50** How has the profitability of your company developed over the last 3 months? It has...

- + increased
- = remained unchanged
- decreased

**Q60** How do you expect the profitability of your company to develop over the next 3 months? It will...

- + improve
- = remain unchanged
- deteriorate

**Q70** How has your capital expenditure developed over the last 3 months? It has...

- + increased
- = remained unchanged
- decreased

**Q80** How do you expect your capital expenditure to develop over the next 3 months?  
It will...

- + increase
- = remain unchanged
- decrease

How has the competitive position of your company developed over the past 3 months?  
It has...

- Q90** Total + improved / = remained unchanged / - deteriorated  
**Q91** In your country + improved / = remained unchanged / - deteriorated  
**Q92** Within the euro area + improved / = remained unchanged / - deteriorated  
**Q93** Within the EU + improved / = remained unchanged / - deteriorated  
**Q94** Outside the EU + improved / = remained unchanged / - deteriorated

How do you expect the competitive position of your company to develop over the next 3 months? It will...

- Q100** Total + improve / = remain unchanged / - deteriorate  
**Q101** In your country + improve / = remain unchanged / - deteriorate  
**Q102** Within the euro area + improve / = remain unchanged / - deteriorate  
**Q103** Within the EU + improve / = remain unchanged / - deteriorate  
**Q104** Outside the EU + improve / = remain unchanged / - deteriorate

## 7.2. Financial services sector survey - Classification of sectors (NACE Rev. 2)

<b>64</b>	Financial service activities, except insurance and pension funding
<b>65</b>	Insurance, reinsurance and pension funding, except compulsory social security
<b>66</b>	Activities auxiliary to financial services and insurance activities