# European Business Cycle Indicators

- **Economic sentiment indicators maintain their upward trend**
- **Improved confidence in industry spilling over into services**
- **Easing of unemployment fears among consumers**
- **Multispeed recovery across the EU countries**
- **Special focus I: Spring Investment Survey**
- **Special focus II: The NACE Rev2 changeover**

Economic sentiment indicators

In April, the Economic Sentiment Indicator (ESI) rose again and exceeded its long term average, reaching 101.9 (+2.1 points) in the EU and 100.6 (+2.7) in the euro area (see Graphs 1a and 1b). However, coming out of a deep recession clearly means that further sustained improvements in this indicator will be required in order for economic activity to reach its pre-crisis levels. The majority of the Member States reported across-the-board improvements in sentiment.

GRAPH 1a: ESI and GDP growth for the EU
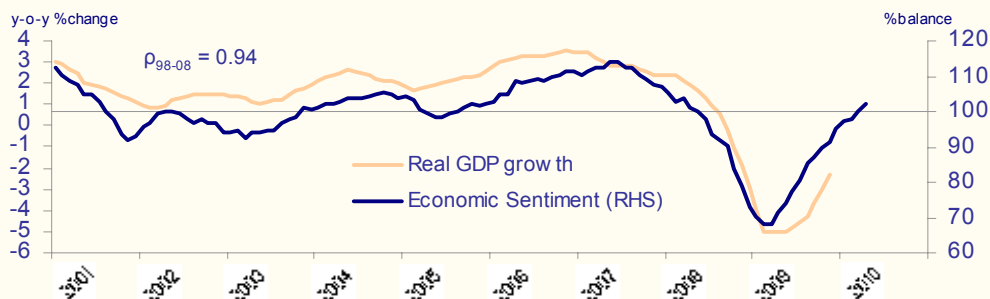
GRAPH 1b: ESI and GDP growth for the euro area
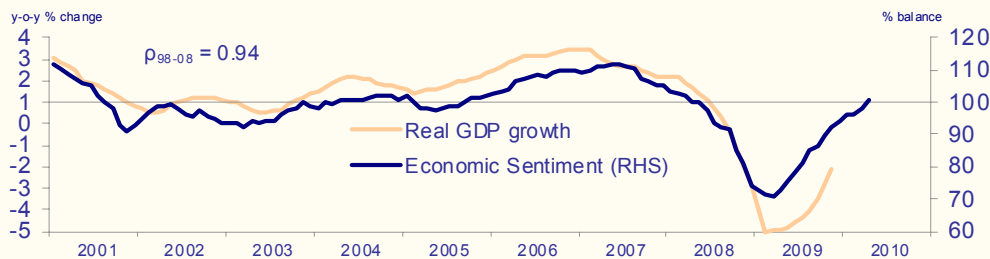
Source: European Commission

Note 1: the horizontal line (RHS) depicts the long-term average of the sentiment indicator (100 = average 90 to 09).
Note 2: both series are plotted at monthly frequency: Monthly GDP data are obtained by linear interpolation of quarterly data.

In both the EU and the euro area, the improvement in sentiment was driven by sizeable gains in services and industry. It appears that optimism is now spreading from industry to services.

Sentiment in industry improved by 3 points in the euro area (see Graph 2), driven by substantially better order books. Managers were even more optimistic about the production trends observed in recent months (not included in the sentiment indicator). In line with the positive evaluation of past production, the reported rate of capacity utilisation improved significantly. On the other hand, the perceived stocks level hit an all-time low, as managers continued to consider their stocks to be below the normal (desirable) level.

GRAPH 2: Industrial confidence indicator and industrial production for the euro area
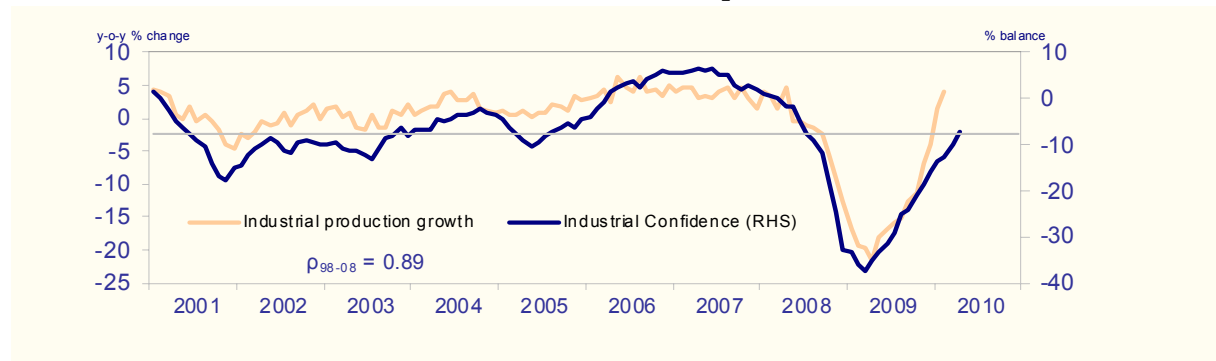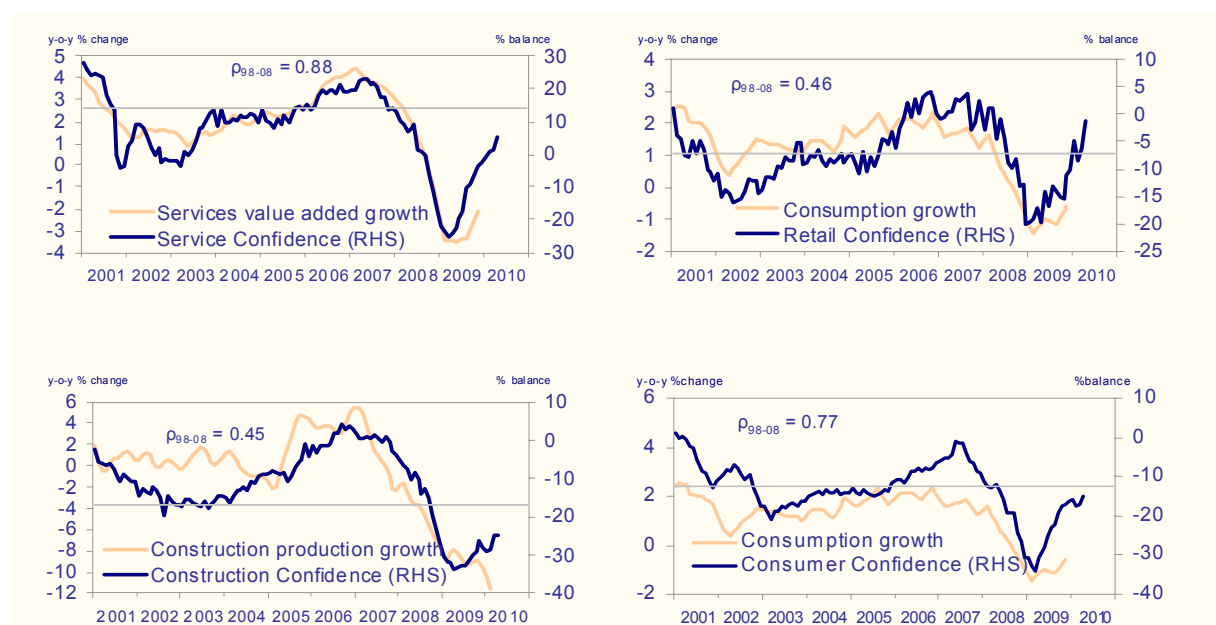

Source: European Commission
Note: the horizontal line depicts the long-term average of the confidence indicator

Confidence in services increased by 4 points in the euro area, due to the positive assessment of recent and future demand evolutions. Encouraging signals were also picked up in the retail trade, where sentiment rose by 5 points, while the construction outlook remained broadly unchanged (see Graph 3).

Confidence among consumers regained its momentum (up by 2 points), thanks to easing fears of unemployment. However, developments varied across countries. While sentiment improved markedly in Germany, it deteriorated in France and UK.

GRAPH 3: Sectoral confidence indicator and reference series for the euro area

Source: European Commission
Note: the horizontal line depicts the long-term average of the confidence indicators

Economic sentiment indicators for the four largest euro area Member States and the UK

Developments of sentiment across the four largest euro area Member States and the UK reveal a multispeed recovery (see Graph 4).

Germany reported the largest increase in economic sentiment (+4.3 points), backed by significant gains in all sectors. Domestic demand is likely to benefit from upbeat sentiment in services and among consumers. The jump observed in industrial capacity utilisation is also encouraging. Germany's ESI is now well above its long term average.

Sentiment also improved considerably in France (+2), where ESI now has surpassed its long term average. The improvement was driven by gains in industry, services and retail trade. On the other hand, French consumers are growing increasingly more pessimistic.

The ESI also increased in Italy and Spain (+1.5 and +1.1, respectively). In Italy, where the ESI is now approaching its long term average, confidence in services recorded the largest increase, while confidence in industry and among consumers stayed broadly unchanged.

In Spain, confidence gains were recorded in all the sectors (except construction) and among consumers. Despite following an upward trend for 8 months in a row, Spain's ESI is still well below its long term average.

In the UK, overall sentiment increased by 0.8 of a point. The main contributor was confidence in industry. The construction sector also recorded a significant improvement, but its contribution to the ESI is minor. The ESI has now surpassed its long term average.

GRAPH 4: ESI and GDP growth (y-o-y) for the four largest euro area Member States and the UK
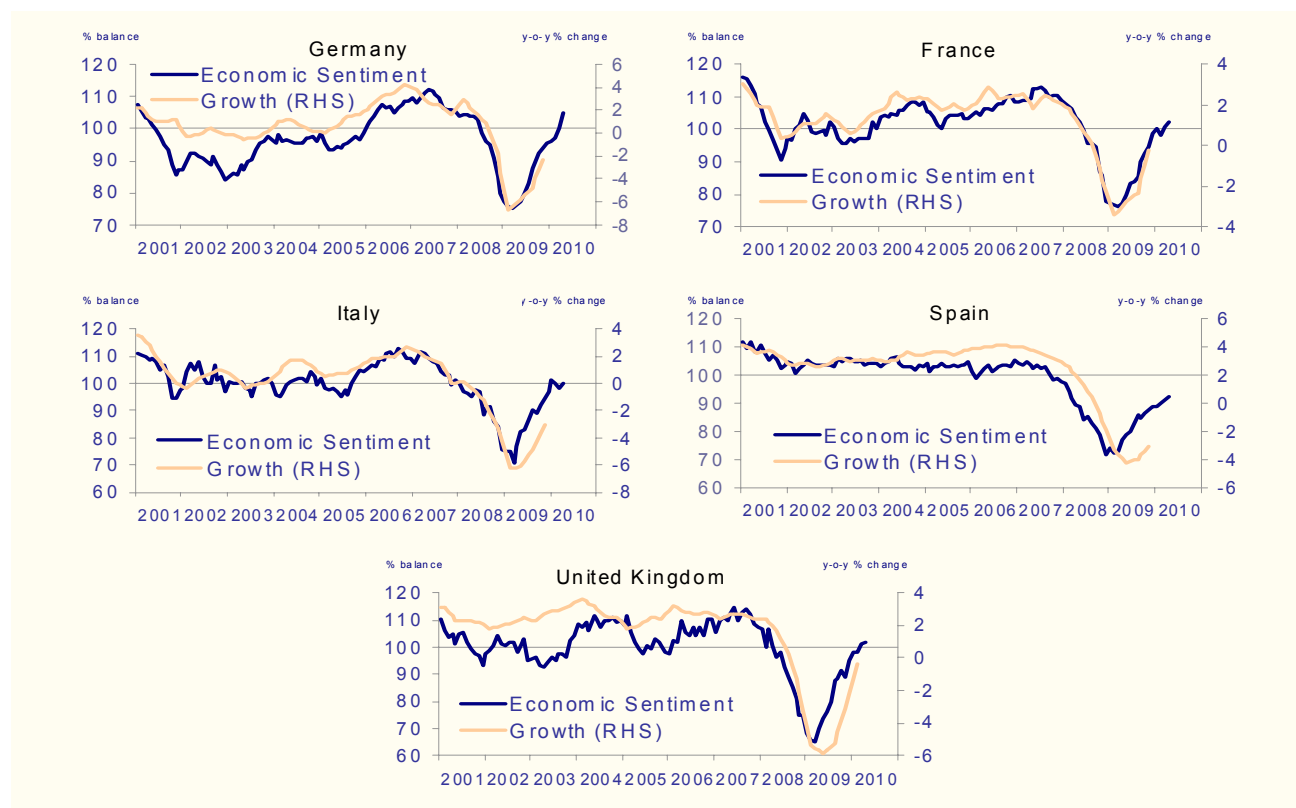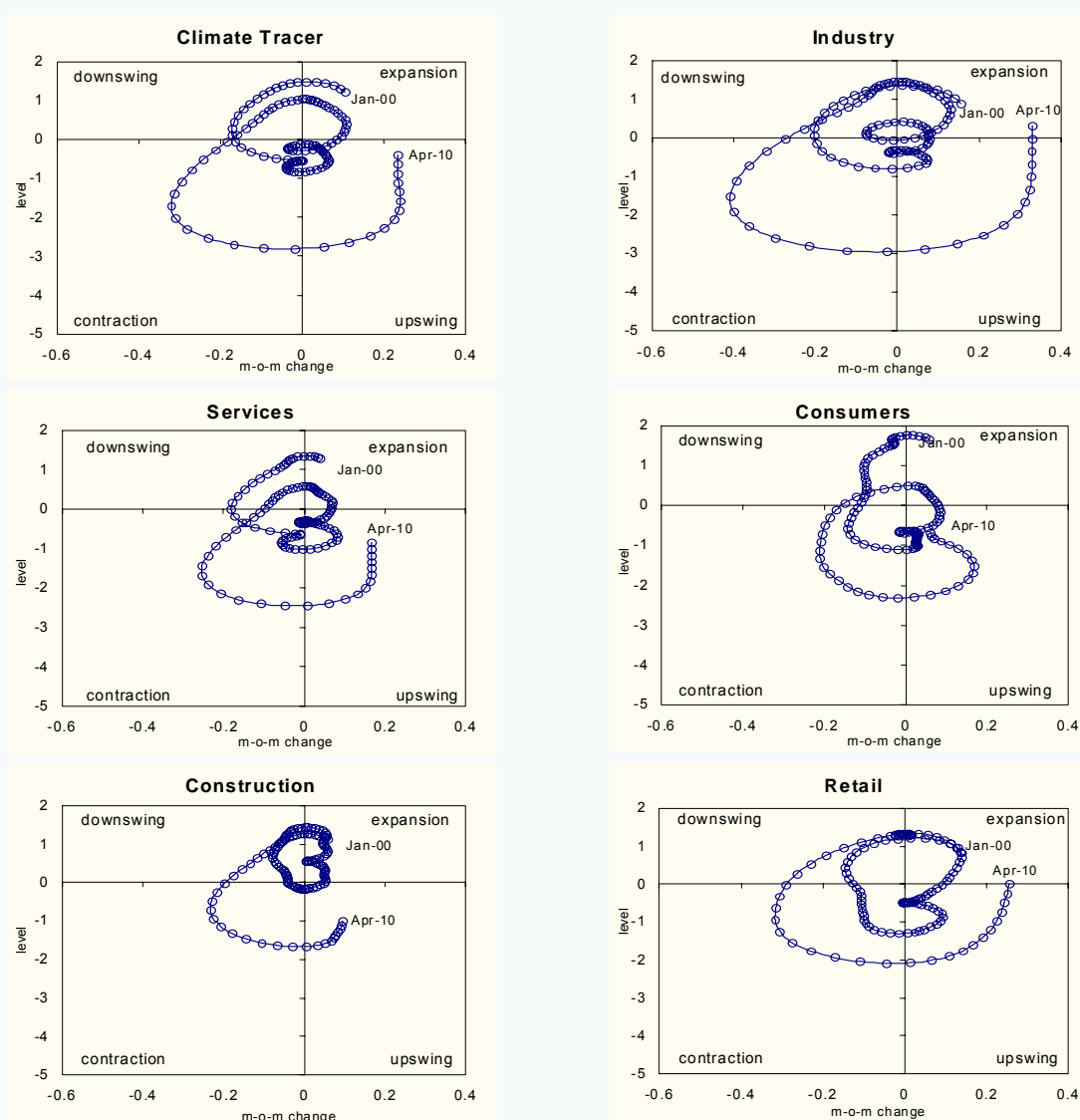

Source: European Commission
Note: the horizontal line depicts the long-term average of the sentiment indicators

The economic climate tracer

Graph 5a shows the economic climate tracer (and its sectoral components) for the euro area. The cyclical behaviour displayed by the graph - through its four quadrants - distinguishes four business cycle phases, namely 'expansion' (top right), 'downswing' (top left), 'contraction' (bottom left) and 'upswing' (bottom right). Cyclical peaks are positioned in the top centre of the graph and troughs in the bottom centre. For the euro area, the economic climate tracer is now firmly in the upswing quadrant. The climate tracer for industry and retail trade entered the expansion area, while the other sectors are still in the upswing phase, with construction lagging behind. There are worrying signals coming from the consumers' climate tracer, as it seems to be heading towards the contraction quadrant.

This section shows the economic climate tracer (ECT): cyclical movements (Graphs 5a and 5b) and its most recent values across the sectors (Graph 6). The compilation of the economic climate tracer is based on a larger set of series than in the ESI and involves a smoothing step (see Annex 1 for details). As a consequence, the resulting message may differ from the analysis set out in the previous sections.

**GRAPH 5a: Economic climate tracer across sectors, euro area**

Source: European Commission

Graph 5b displays the economic climate tracer for the four largest Member States in the euro area and for the UK. While Germany is in the expansionary phase, other countries are still in the upswing quadrant, with Spain lagging behind.

GRAPH 5b: Economic climate tracer for the four largest euro area Member States and the UK
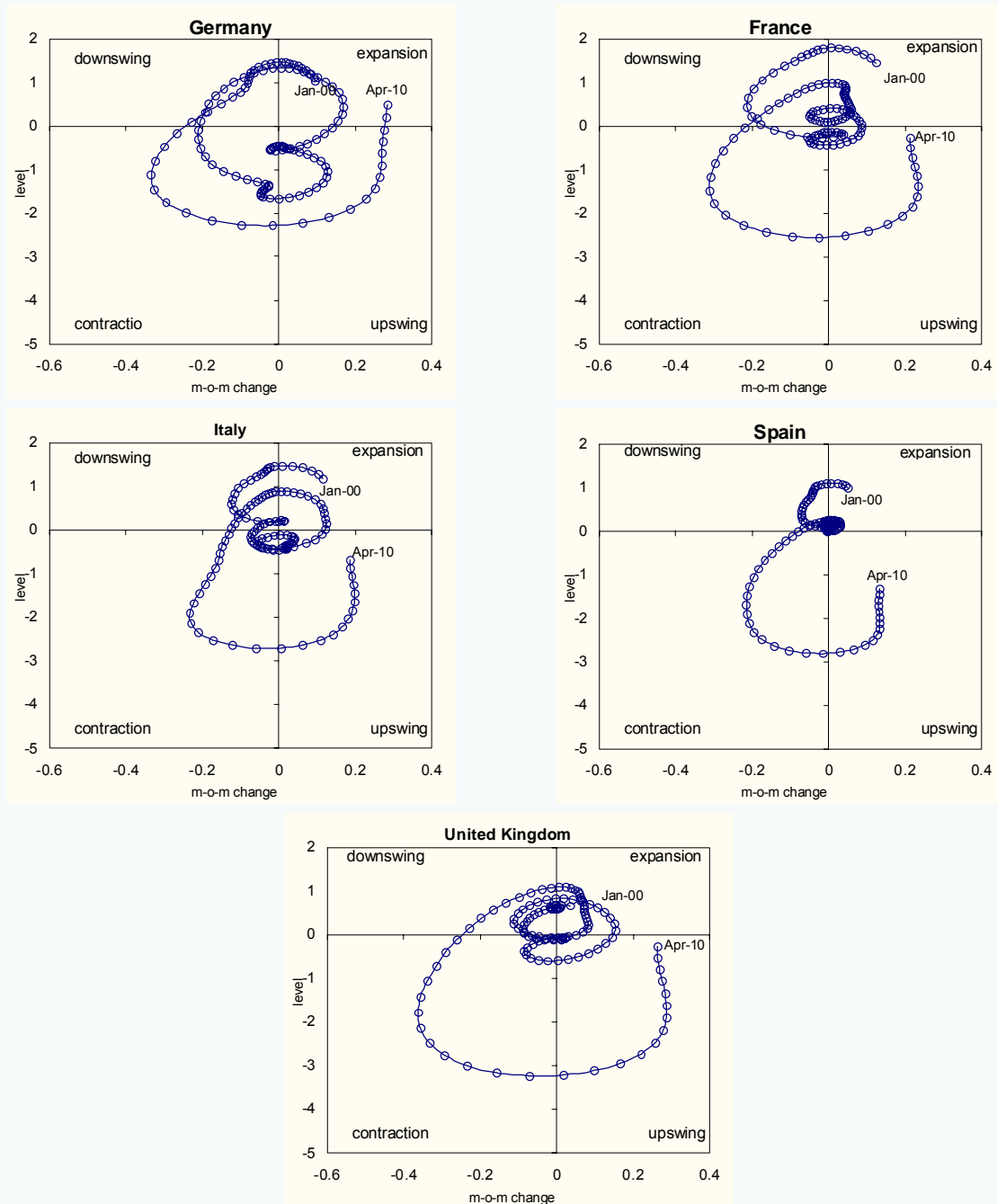
Graph 6 shows the latest values of the climate tracer broken down by sector. In the case of Germany, most of its sectoral climate tracers are now in the expansion quadrant. The same is true for industry and retail trade in both France and UK. Spanish and Italian sectors are clustered in the upswing quadrant while, in Italy, the consumers' climate indicator has reverted to the contraction phase.

GRAPH 6: Sectoral breakdown of the climate tracer for the four largest euro area Member States and the UK
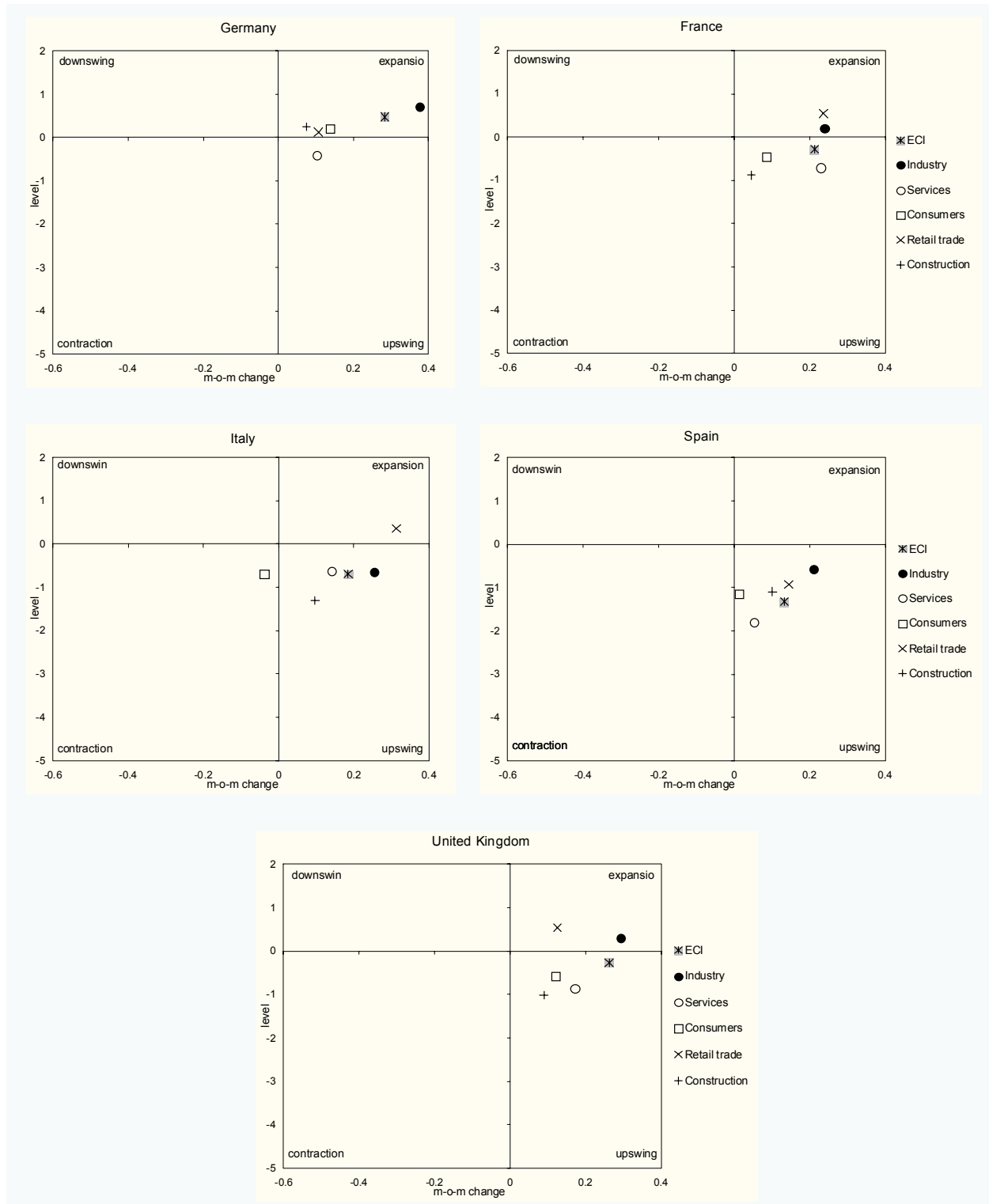
Source: European Commission

Euro area turning point index

On the basis of the latest survey data for the euro area, the turning point index - based on a Markov switching model - estimates the difference between high- and low-regime probabilities at 0.98 in April. The turning point index has now been in favourable territory for ten consecutive months. This suggests an ongoing recovery for the euro area (see Annex 1 for details).

GRAPH 7: Turning point index for the euro area
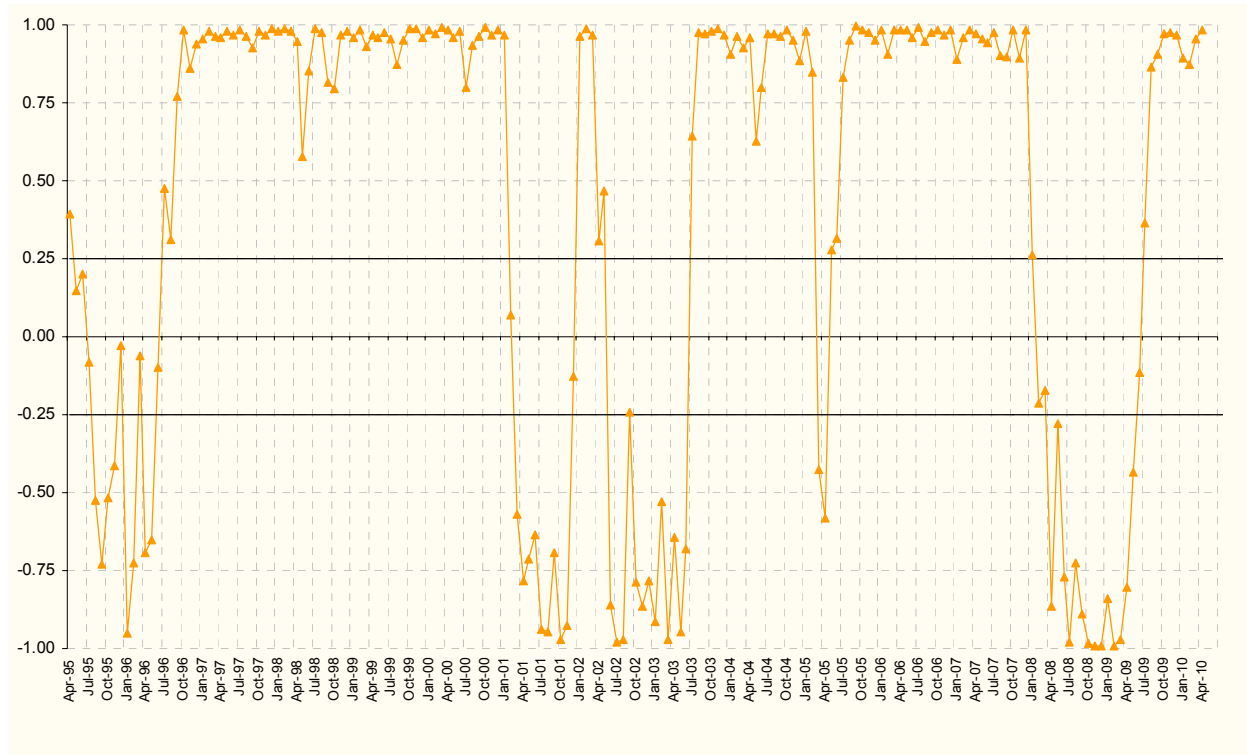
Source: European Commission

Results of the spring EU
investment survey in
manufacturing
by **Roberta Friz**

This month's special focus presents the
results of the latest Investment survey
for the EU and for the large Member
States, conducted in March and April
2010.

In this survey, firms are requested to
reveal their investment assessment for
the previous year and their expectations
for the current year.

Developments in overall investment

According to Eurostat, in 2009 total investment dropped by 11.6% in real terms in the EU. This is the
largest reduction since the beginning of the Eurostat series in 1995. This outcome is less negative than
managers' assessment of investment in manufacturing industry in 2009, which is estimated at -18%. The
difference between the two figures is mainly due to the fact that Eurostat data refer to the total economy
(including public investments), while the investment survey covers the manufacturing sector only[1].
According to the Investment survey, investment in the EU is expected to decline by a further 2% in 2010.
Results for the euro area are very similar. Although still negative, the outlook for the current year has
actually improved when compared to the expectations reported in the survey conducted in
October/November last year, when the drop in investment for 2010 was expected to be 6% (Graph 1).

**Graph 1: Growth in Real Gross Fixed Capital Formation (GFCF) and surveyed change of
investments in manufacturing in the EU, annual percentage changes**
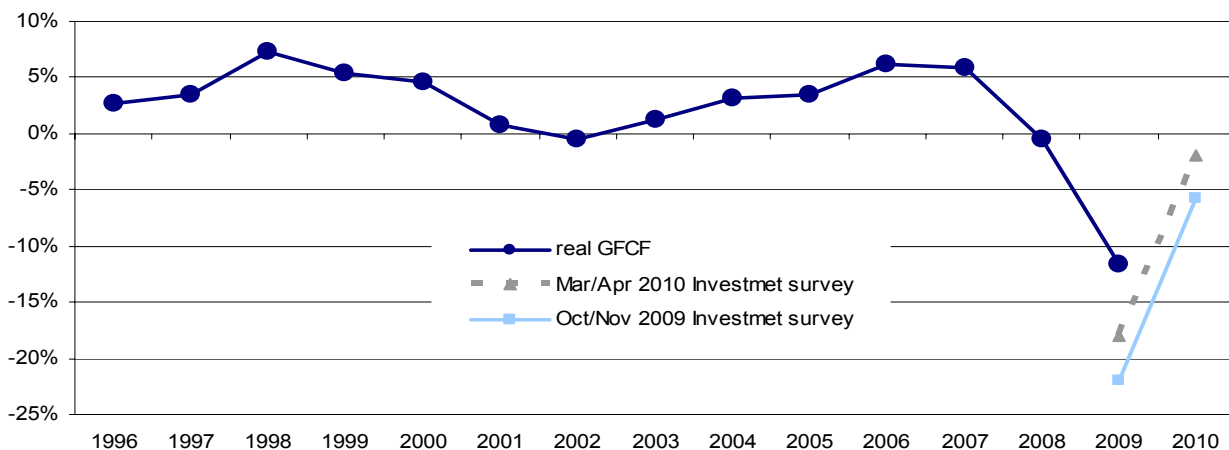
* In order to compare surveyed changes of investment to real investment growth, as measured by gross fixed capital formation (GFCF), the
surveyed percentage change of investment is deflated by the deflator of equipment investment in the AMECO database.
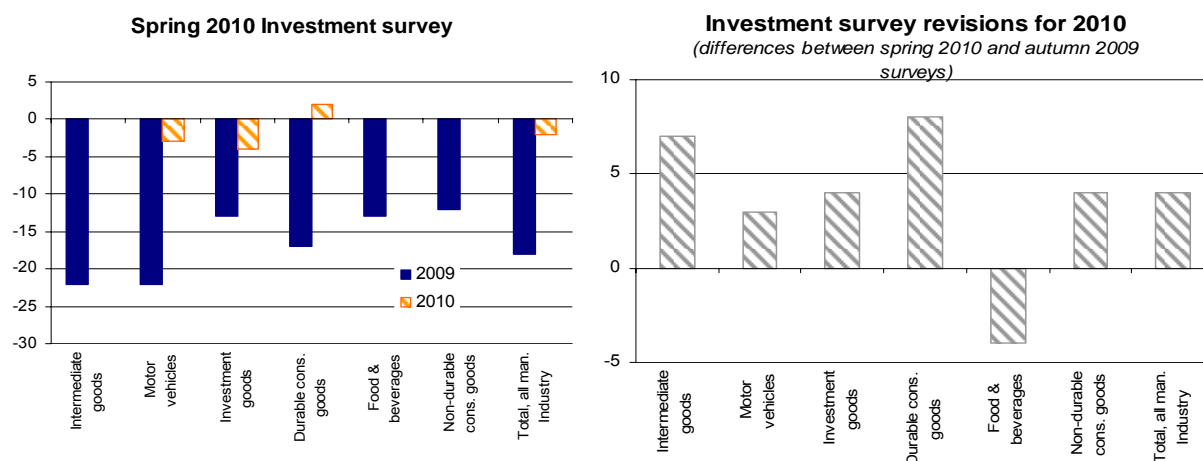
Source: European Commission

---

[1] Eurostat does not report GFCF for the manufacturing sector.

Investment dynamics by sectors

Looking at the sectoral breakdown (see Graph 2), the sizable contraction of investment in 2009 has affected all sectors and the reduction has been particularly severe in the case of investment related to the production of intermediate and durable consumer goods, which declined by 22% and 17%, respectively. Among consumer goods, investment in the motor vehicle sector contracted by an estimated 22%. The investment goods sector also reported a sharp decline of 13% in 2009.

In 2010, the expected further contraction of investment should affect the investment goods sector, in particular, with investment there expected to decline by 4%, and the motor vehicles sector, with an expected contraction of 3%. By contrast, investment in the durable consumer goods sector is expected to grow by 2%. Although the outlook for this year is still negative, it has improved compared to the expectations reported six months ago. Compared with the survey conducted in October/November last year, all sectors reported more favourable expectations, except the food and beverages sector where expected investment growth has been revised downwards by 4 percentage points (see Graph 2).

Graph 2: Change of investments in the EU by sectors, annual percentage changes

Source: European Commission, Investment Survey

Investment by enterprise size

Looking at investment survey results in terms of enterprise size class (see Graph 3), all types of companies reported strong declines in 2009. The most severe drop was among large enterprises (employing between 250 and 500 people) where managers estimate that their investment will have decreased by 20%.

In 2010, enterprises employing between 250 and 500 employees expect to increase investment by 3%; enterprises with 500 and more employees expect an increase of 1%. Small and medium sized companies plan to further reduce their investment in 2010 although at a slightly less dramatic rate (by 1% and 7%, respectively). Managers expect to cut investment by less than was forecast in autumn 2009, and they revised their investment expectation for 2010 upwards - by 4 percentage points. The biggest revision was in the segment of small businesses (employing fewer than 50 people).

Graph 3: Change of investments in manufacturing in the EU by size, annual percentage changes

Spring 2010 Investment survey

Investment survey revisions for year 2010
(differences between spring 2010 and autumn 2009 surveys)
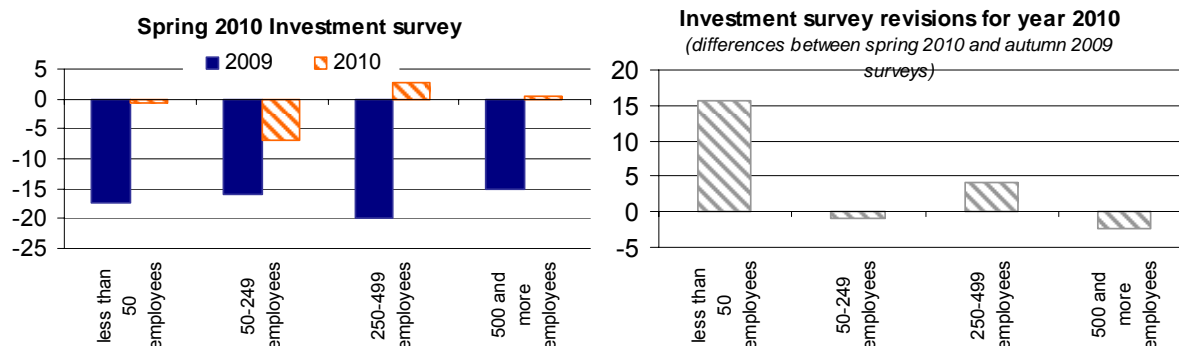
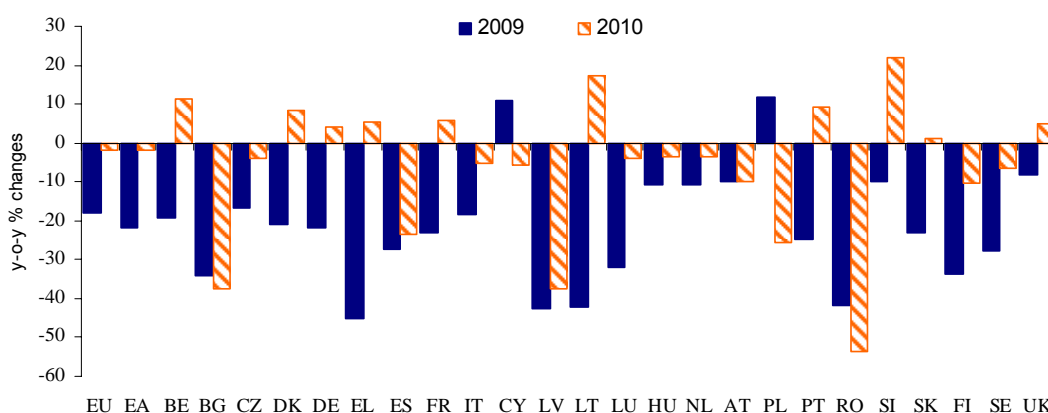Source: European Commission, Investment Survey

Developments by country

According to Eurostat releases, Gross Fixed Capital Formation (GFCF) in 2009 decreased in all of the largest Member States. The decline was particularly strong in Spain (-15.3%), the UK (-14.9%), the Netherlands (-13.0%), Italy (-12.1%) and Germany (-8.9%), while Poland (-0.3%) and France (-0.7%) appeared to be less affected. Generally speaking, managers' assessment of investment in the manufacturing sector for 2009 is more negative than the Eurostat outcome for total investment, with a few exceptions, such as the Netherlands, Poland and the UK, where manager assessment of investment growth is less negative than the Eurostat outcome.

Although it remains negative, the outlook for 2010 has improved when compared to the expectations reported half a year ago. Nonetheless, there are significant differences among countries: managers in Germany (+4%), France (+6%) and the UK (+5%) expect to increase investment in 2010, which contrasts with the expectation of sizeable reductions in Poland (-26%), Spain (-24%) and Italy (-5%) (see Graph 4).

Graph 4: Change of investments in manufacturing in the EU member states, annual percentage changes

Source: European Commission, Investment Survey
Note: Estonia and Malta figures are missing, as the corresponding data are still under verification. No investment survey is conducted in Ireland.

In the larger EU economies, the breakdown by size of enterprise reveals that the dramatic reduction in investment in 2009 reflected major falls across all size categories (see Graph 5). The only exceptions were medium-sized enterprises in Spain and large firms in Poland, which reported that their investment had increased in 2009. The situation in 2010 is more variable across countries and size of enterprise, suggesting some uncertainty around future developments.

Graph 5: Change of investments in manufacturing by size, annual percentage changes
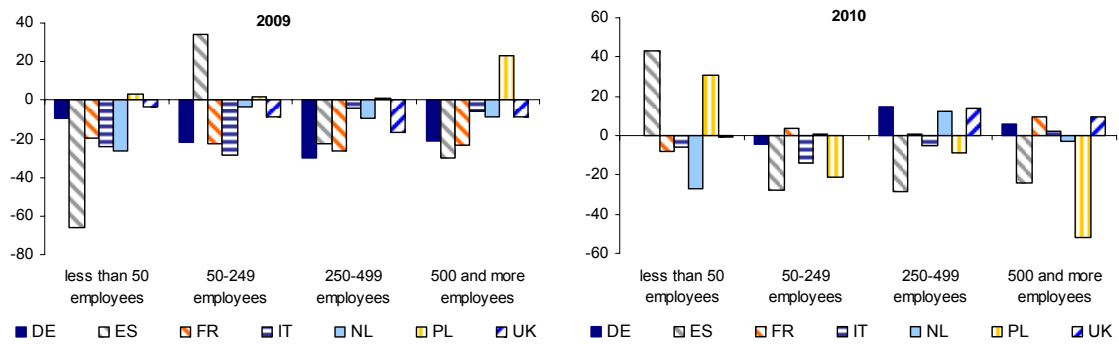
Source: European Commission, Investment Survey

The NACE Revision 2
and practical
considerations for users
of business survey data
by **Reuben Borg**

THE NACE REVISION 2 and Business surveys

Starting with the release of the ESI in May 2010, the European Commission will publish its business survey results according to the NACE Revision 2 classification[2]. This is the consequence of a change in the identification and grouping of similar economic activities, which affected the collection and the reporting of the survey data. While no significant change is expected in the aggregates for the various sectors, differences may be noticeable in the historical series for detailed data. This article gives an overview of the changeover process and describes the practical implications of this change for the users.

NACE is the European statistical classification of economic activities. It provides a reference framework for the production and the dissemination of statistics related to economic activities. Statistics produced on the basis of NACE are comparable at European level and, in general, at world level in line with the United Nations' International Standard Industrial Classification of all Economic Activities (ISIC).

The survey data as currently published on the BCS website are classified according to the NACE 1.1 nomenclature. In May 2010, these data will be published according to the new NACE 2, which reflects the technological development and structural changes of the economy. Indeed, since 2000, a major revision of international and European classifications of economic activities and products has taken place. In the case of the European framework, Regulation (EC) No 1893/2006 (hereinafter referred to as 'the Regulation') established NACE Revision 2 as the new basis for classifying economic activities.

As stated in the same Regulation, an up-to-date classification such as NACE 2 is central to the Commission's ongoing efforts to modernise the production of EU statistics. In 2009, Eurostat started publishing short-term and structural business statistics according to NACE 2, while national accounts are expected to implement the change in September 2011. Responding to this development, business survey data - which are also part of the Principal European Economic Indicators - are now even more comparable to short-term statistics and are more serviceable as early indicators prior to the actual publication of hard data. Such a change requires a set of indicators that are timely, comparable and relevant, thus enabling better economic monitoring and decision making by governments, financial institutions, businesses and all other operators in the internal market.

---

[2] The consumer survey results will not be affected.

Changes in the collection and reporting of business survey data

The NACE 2 changeover brings about a change in the way survey data are collected, grouped, and reported. The NACE 2 classification has increased the level of detail, mainly in the services sector, so as to reflect the increased diversity and specificity of economic activities. This means that a number of activities, identified by numerical codes, are either completely new or have been distinguished from other activities and aggregated with more similar ones. As a consequence of the changes in the economy, some specific activities have been moved from a NACE 1 section to a different NACE 2 section; this is like in the case for 'publishing activities', which have been moved from manufacturing to the communication section, together with other services. The numerical codes in NACE 2 may be different from those in NACE 1, even though the composition of many groupings may remain broadly unchanged. Correspondence tables are used to map the old NACE 1.1 codes into the new NACE 2 codes[3].

All of this involves a change in the sampling frame of enterprises and requires a modification of the samples currently used for collecting data. The updated business registers encoded in NACE 2 help institutes to identify those units which fall within their revised economic groupings. As the practice currently stands, not all of the economic activities reported in the regulation will be surveyed, but chiefly those which exhibit a distinct business cycle. For example, agriculture (code 01), forestry (02) and fishing (03) (grouped under Section A in the regulation) are not covered. The methodology used for calculating balances and aggregating results remains unchanged.

The change of classification involves *per se* a break in the time series, with the likelihood that data from previous years (NACE 1) may not be directly comparable with the new series (NACE 2). The Economic Sentiment Indicator and the aggregates for each sector (or Confidence Indicators) are unlikely to see substantial shifts in the balances of the historical series. On the other hand, a number of detailed codes will see a substantial change in the historical pattern as compared to their corresponding codes in NACE 1, because the underlying composition of firms will have changed.

Practical considerations for users of business survey data

There are several issues that users of business survey data need to consider. As from May 2010, survey data are collected and reported according to the new NACE 2 classification.

The process of back-casting will transform the historic NACE 1 data into the new NACE 2 format. Historical data for the detailed 2-digit codes will be back-cast to 2000, while Confidence Indicators for the sectors and MIG will be back-cast to 1985, if possible. Back-cast data, as provided by the partner institutes of the BCS programme, will be made available on the EUROPA website as per May 2010. However, construction of the new NACE 2 dataset will be gradual. The completeness of this dataset will depend on the progress made by the partner institutes in providing back-cast data.

The final result of the back-casting process will be a representative and continuous historical NACE 2 dataset, including EU and euro area aggregates. This dataset will be made available at a later stage, after validation by DG ECFIN.

The full NACE 1 dataset until April 2010 will remain available as separate downloadable files on the EUROPA website.

---

[3] The final classification of activities according to NACE 2 is available on the following link:
http://ec.europa.eu/economy_finance/db_indicators/surveys/documents/2010/bcs_nace_2_classification_en.pdf

Since the Economic Sentiment Indicator press release mainly reports the totals, no major changes in the data and charts are expected. There will be changes, on the other hand, in the online databases. First, the numerical codes of economic activities will be different. For example, in the services sector, NACE 1 code 55, which used to be 'Hotels and restaurants', is now split into two divisions: NACE 2 code 55 'Accommodation' and 56 'Food and Beverage service activities'. Furthermore, in the retail sector, the previous disaggregation by themes has changed and been reorganised according to NACE 2 divisions 45 'Wholesale and retail trade and repair of motor vehicles and motorcycles' and 47 'Retail trade, except of motor vehicles and motorcycles'.

Secondly, once the full back-cast data are available, the actual historical data might exhibit a different business cycle pattern from previously. This applies mainly in the case of specific detailed codes rather than the sector totals. This will necessitate a re-calibration and testing of those statistical models which use survey data. Moreover, the peaks and troughs of the business cycle for a particular activity may also change. The continuing availability of the historical NACE 1 database will help users to distinguish between the two series. During the transitional period, users may want to re-check the links to the downloadable files until the full changeover to NACE 2 is complete. A common and harmonised syntax will facilitate this process.

Reference series

The reference series are from Eurostat, via Ecowin.

Confidence indicators	Reference series (volume/year-on-year growth rates)
Total economy (ESI)	GDP, seasonally- and calendar-adjusted
Industry	Industrial production, working-day-adjusted
Services	Gross value added for the private services sector, seasonally- and calendar-adjusted
Consumption	Household and NPISH final consumption expenditure, seasonally- and calendar-adjusted
Retail	Household and NPISH final consumption expenditure, seasonally- and calendar-adjusted
Building	Production index for building and civil engineering, trend-cycle component

Note: Monthly data are obtained by linear interpolation of quarterly data.

Economic sentiment indicator

The economic sentiment indicator (ESI) is a weighted average of the balances of selected questions addressed to firms and consumers in five sectors covered by the EU Business and Consumer Surveys Programme. The sectors covered are industry (weight 40%), services (30%), consumers (20%), retail (5%) and construction (5%).

Balances are constructed as the difference between the percentages of respondents giving positive and negative replies. The Commission calculates EU and euro area aggregates on the basis of the national results and seasonally adjusts the balance series. The indicator is scaled to have a long-term mean of 100 and a standard deviation of 10. Thus, values greater than 100 indicate above-average economic sentiment and vice-versa. Further details on construction of the ESI can be found at:
http://ec.europa.eu/economy_finance/db_indicators/surveys/method_guides/index_en.htm.
Long time series of the ESI and confidence indicators are available at:
http://ec.europa.eu/economy_finance/db_indicators/surveys/time_series/index_en.htm.

Economic climate tracer

The economic climate tracer is a two-step procedure. The first consists of building economic climate indicators. They are based on principal component (PC) analyses of balance series (s.a.) from the surveys conducted in industry, services, building, retail trade and among consumers. In the case of industry, five of the monthly questions in the industry survey are used as input variables (employment and selling-price expectations are excluded). For the other sectors the number of input series is: services: all five monthly questions; consumers: nine questions (price-related questions and the question about the current financial situation are excluded); retail: all five monthly questions; building: all four monthly questions. In the case of the euro area, the first principal component explains between 65% (retail) and 92% (industry) of the variance of the input balance series in question.

The economic climate indicator (ECI) is a weighted average of the five PC-based sector climate indicators. The sector weights equal those underlying the economic sentiment indicator (ESI), i.e. industry 40%; services 30%; consumers 20%; construction 5%; and retail trade 5%. The weights were allocated broadly on the basis of two criteria: the representativeness of the sector in question and historical tracking performance vis-à-vis GDP growth.

In the second step of the procedure, all climate indicators are smoothed using the HP filter in order to eliminate short-term fluctuations over a period of less than 18 months. The smoothed series are then standardised to a common mean of zero and a standard deviation of one. The resulting series are plotted against their first differences. The four quadrants of the graph, corresponding to the four business cycle phases, are crossed in an anti-clockwise movement. The phases can be described as: above average and increasing (top right, 'expansion'), above average but decreasing (top left, 'downswing'), below average and decreasing (bottom left, 'contraction') and below average but increasing (bottom right, 'upswing'). Cyclical peaks are positioned in the top centre of the graph and troughs in the bottom centre.

Markov switching turning point index

The turning point index model, based on the work of Grégoir and Lenglart (2000)[4], aims to identify economic growth trends in the euro area, using as input all the confidence indicators derived from the surveys of industry, services, building, retail trade and consumers. This model is symmetrical in signalling turning points. TPI values within the ± 0.25 range point to stabilisation, when the pace of activity is around its potential (the signals received are very varied and do not indicate any clear-cut upward or downward movement). The economy is performing a soft landing or soft take-off, depending on whether the previous period was marked by acceleration or deceleration. By contrast, the signal is very consistent when TPI values come very close to or actually reach ± 1: the cyclical phase is deemed to be clearly favourable or unfavourable; economic activity is in a period of sharp acceleration (or sharp deceleration or even contraction).

---

[4] Grégoir, S. and Lenglart, F. (2000), 'Measuring the probability of a business cycle turning point by using a multivariate qualitative hidden Markov model', Journal of Forecasting, 19.