European Business Cycle Indicators

N.B.: Business survey data for May 2010 are now classified in accordance with an updated version of the Nomenclature of Economic Activities (NACE Rev. 2); recent developments should therefore be interpreted with caution.

- **Upward trend in the economic sentiment indicator comes to a standstill**
- **Further improvement in confidence in industry**
- **Consumers worried about the general economic outlook**
- **Recovery at different speeds across EU countries**
- **Special focus: A glimpse at the effect of the NACE changeover on business survey data**

Economic sentiment indicators

In May the economic sentiment indicator (ESI) slipped back to 100.0 (down by 1.9 points) in the EU and to 98.4 (down by 2.2 points) in the euro area. It should be borne in mind that the latest movements in the ESI are influenced by the change of classification of economic activities for the business surveys in May, which led to a break in the series (see 'Special focus'). In-house checks indicate that the changeover did affect the level of the figures, making interpretation more difficult. On the whole, however, this shift did not affect the direction of the change, but only its magnitude.

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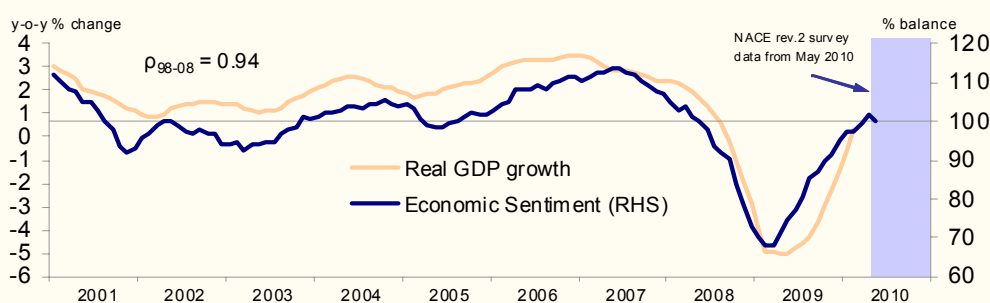
GRAPH 1b: ESI and GDP growth for the euro area
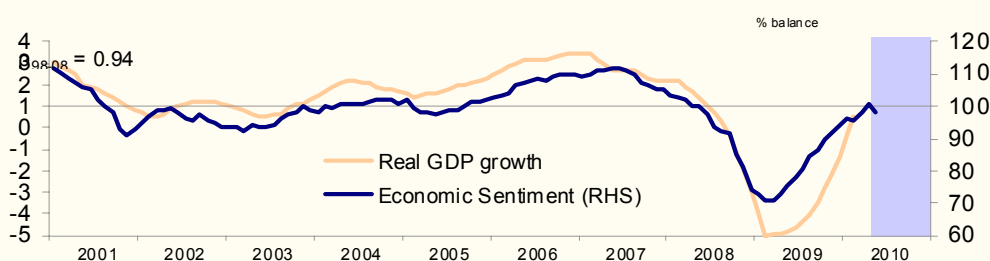
Source: European Commission

Note 1: The horizontal line (RHS) marks the long-term average of the sentiment indicator (100 = average for 1990 to 2009).
Note 2: Both series are plotted at a monthly frequency. Monthly GDP data are obtained by linear interpolation of quarterly data.

While sentiment in industry continued to improve, all other sectoral sentiment indicators dropped in the euro area.

In the euro area, sentiment in industry further improved slightly, albeit at a slower pace (see Graph 2). The current level of the indicator suggests that economic activity in industry will continue to recover in the next few months, although it still has some way to go before it returns to its pre-crisis height.

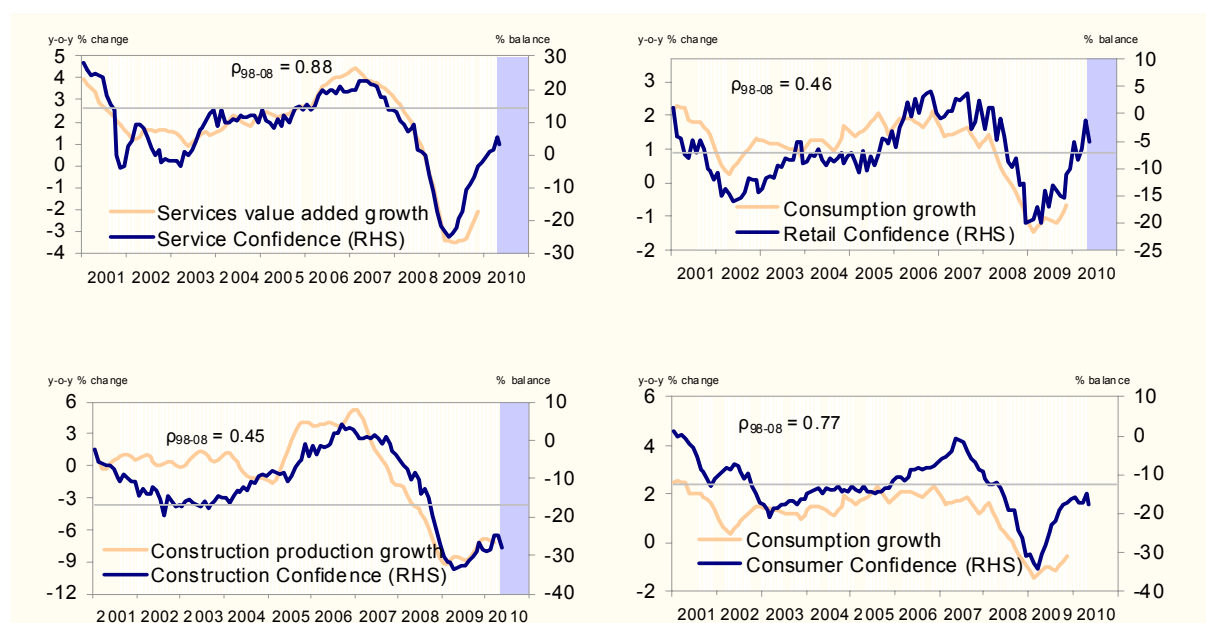**GRAPH 2: Industrial confidence indicator and industrial production for the euro area**
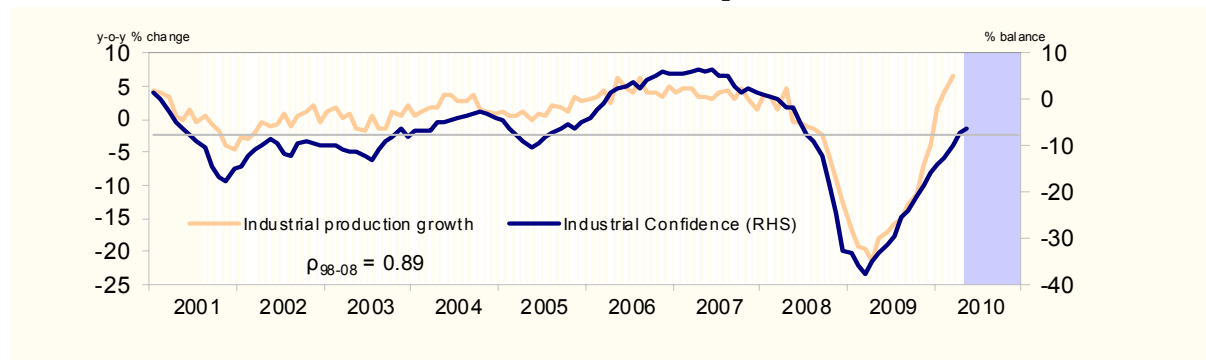
Source: European Commission
Note: The horizontal line marks the long-term average of the confidence indicator.

Confidence in services declined in the euro area. Negative signals were also recorded in retail trade and construction (see Graph 3).

The consumer confidence indicator, which is not affected by the changeover, declined markedly in the euro area (down by 3 points). Consumers were worried about the general economic outlook, although their assessment of the labour market continued to improve. The sharpest drops were reported in southern Europe. Confidence also declined among German and French consumers, whereas Dutch consumers were more optimistic. The decline is sizeable, but largely reflected worsening expectations concerning the general economic situation, strongly influenced by the flow of media news on the economic outlook, which was mostly negative over the last few weeks.

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

Source: European Commission
Note: The horizontal line marks the long-term average of the confidence indicators.

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

Changes in sentiment across the four largest euro area Member States and the UK reveal diverging trends, suggesting recovery at different speeds (see Graph 4).

The changeover to NACE Rev. 2 had an impact on the underlying series. However, it did not affect the direction of the change, but only its magnitude. The confidence indicators in industry were particularly unaffected, whereas those for both services and retail trade were more volatile.

Germany reported a modest improvement in economic sentiment, backed by positive results in industry. The upward trend in German consumers' confidence came to a standstill in May.
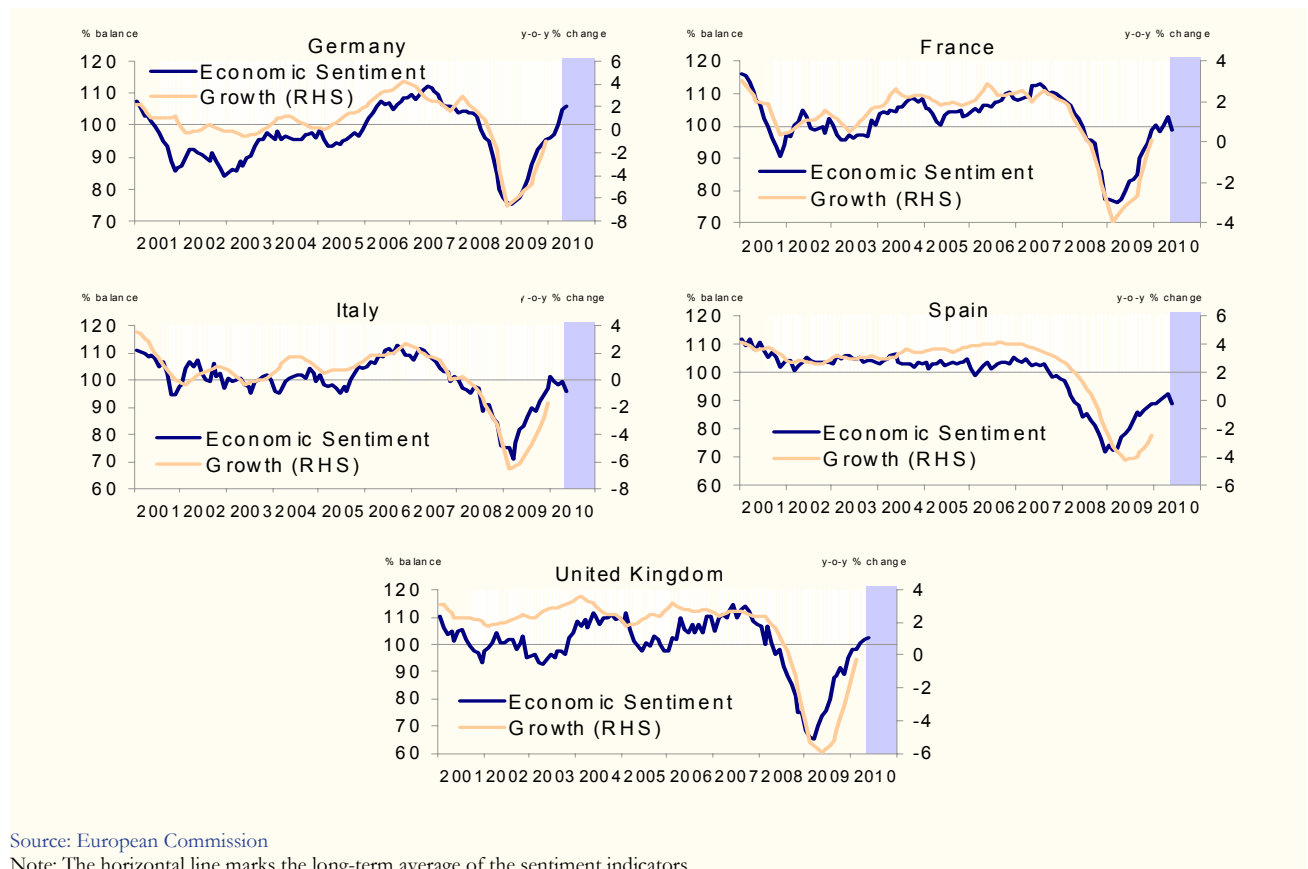
Sentiment declined in France, driven down by pessimistic views in industry. French consumers are growing increasingly pessimistic too.

The ESI also deteriorated in Italy, where confidence in industry stayed broadly unchanged but confidence among consumers deteriorated significantly.

In Spain, confidence dropped sharply amongst consumers, but only moderately in industry.

In the UK, overall sentiment worsened. Both industrial and consumer confidence showed a significant deterioration.

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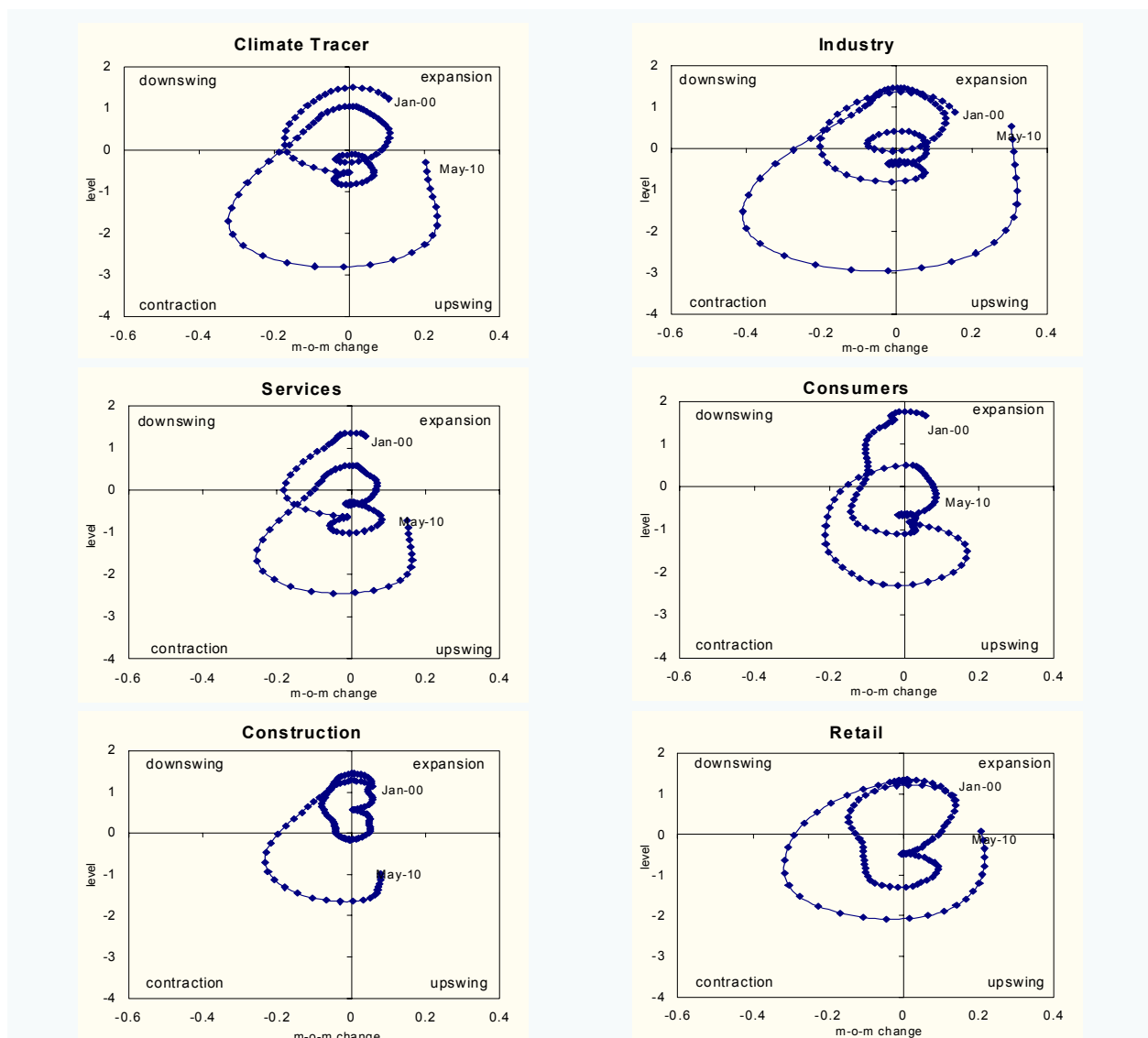

Source: European Commission
Note: The horizontal line marks the long-term average of the sentiment indicators.

The economic climate tracer

Graph 5a shows the economic climate tracer (and its sectoral components) for the euro area. The graph distinguishes between four phases of the business cycle — represented by its four quadrants — 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. Based on NACE Rev. 2 input data for May 2010 and NACE Rev. 1 data until April, the economic climate tracer for the euro area remains firmly in the upswing quadrant. The climate tracer for industry is now in the expansion area, while the other sectors are still in the upswing phase, with construction lagging behind. There are worrying signals from the consumer climate tracer, which seems to be heading towards the contraction quadrant. By contrast, encouraging signs are being shown by the retail trade climate indicator.

> This section shows the economic climate tracer (ECT), both cyclical movements (Graphs 5a and 5b) and its most recent values across sectors (Graph 6). The economic climate tracer is compiled from a larger set of series than 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. Germany is in the expansion phase, whereas the other countries are still in the upswing quadrant, with the UK leading and Spain lagging behind. Recent developments should, however, be interpreted with caution.

GRAPH 5b: Economic climate tracer for the four largest euro area Member States and the UK
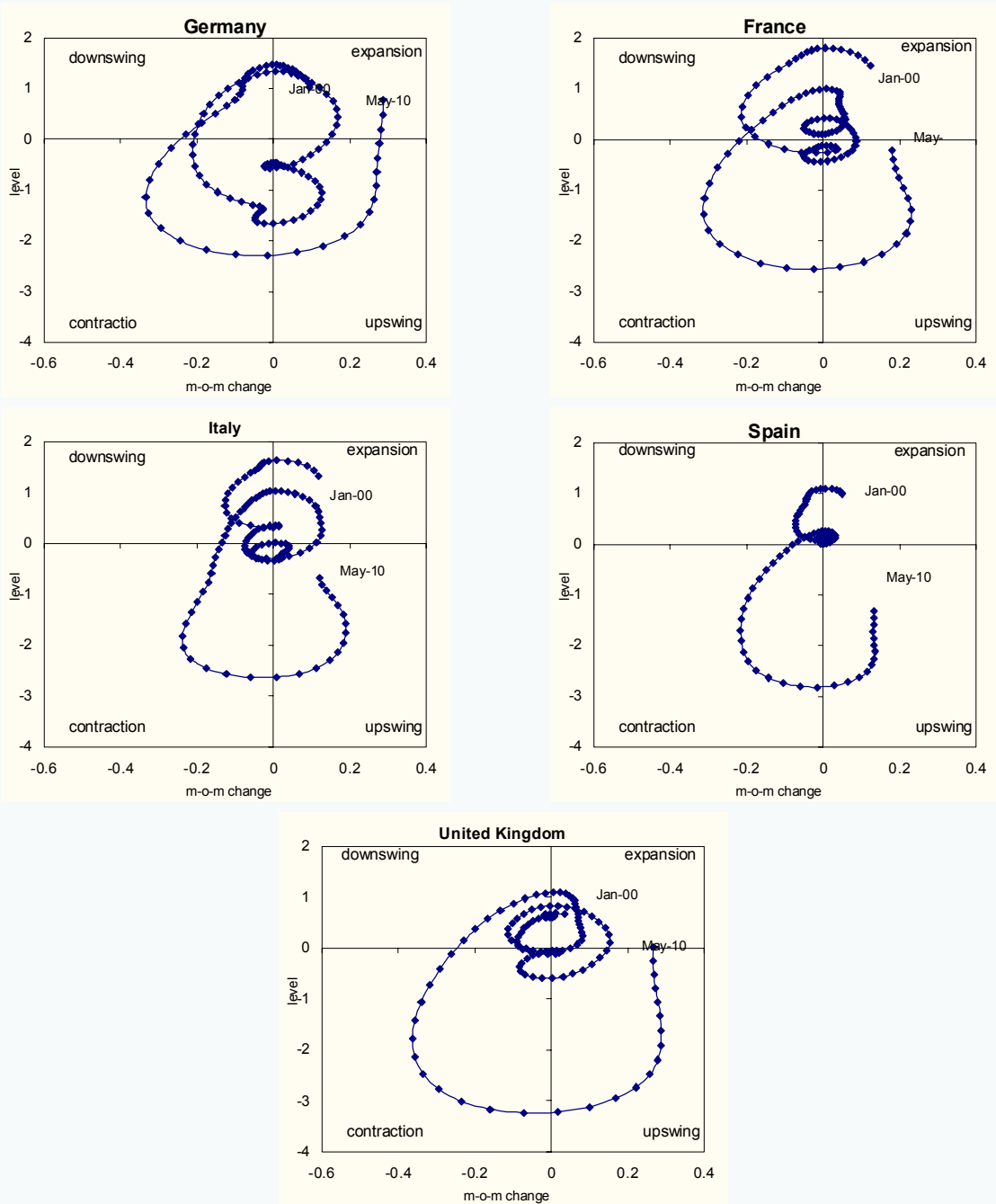
Source: European Commission

Graph 6 shows the latest values for 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 the UK. Spanish and Italian sectors are clustered in the upswing quadrant, but the consumer climate indicator has slipped back to the contraction phase in Spain and Italy.

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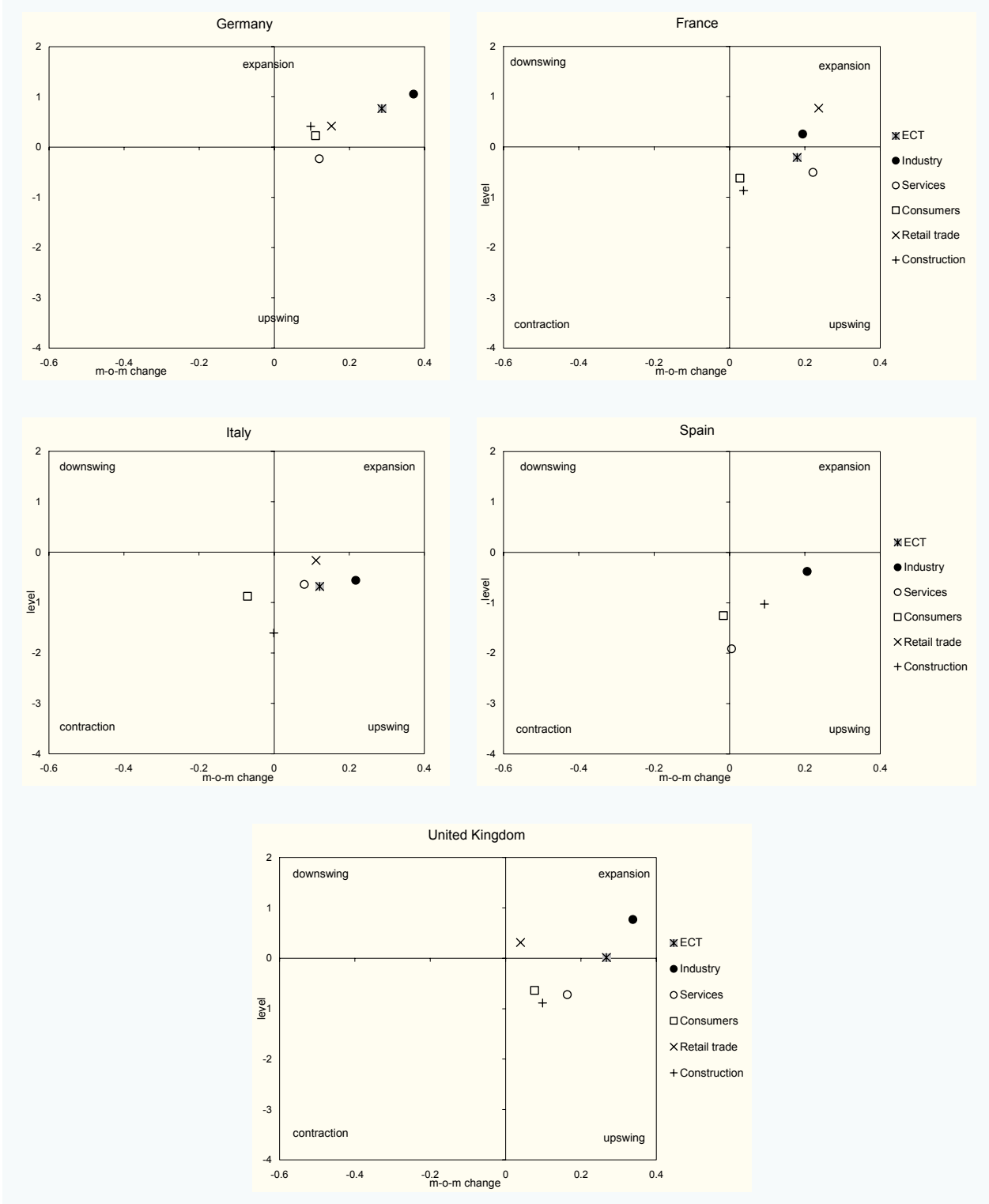
Source: European Commission

Euro area turning point index

The turning point index — based on a Markov switching model — estimates the difference between high-and low-regime probabilities. On the basis of the latest survey data for the euro area, the turning point index declined sharply to -0.16 in May, after having been in favourable territory for ten consecutive months. This development indicates considerable economic uncertainty as the signals received are very varied and do not indicate any clear-cut upward or downward movement (see Annex 1 for details).

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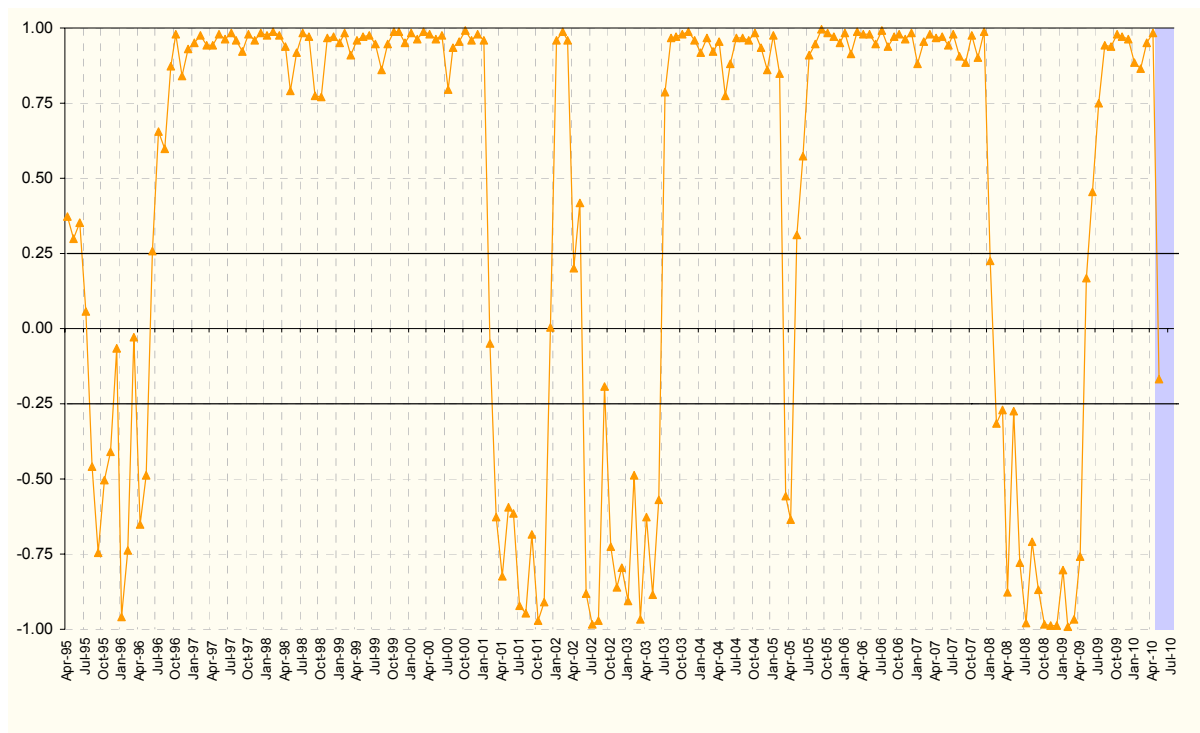
Source: European Commission

NACE 2 backcast *v.* NACE 1: a glimpse at the effect of the changeover on business survey data

by **Angela D'Elia**

This month's 'Special focus' presents initial findings on the impact of the changeover to NACE 2 on business surveys.

No sizeable effect is found on the size and signs of the month-on-month changes in the ESI.

The changeover seems to have had a by no means negligible effect on the level of confidence indicators in services and retail trade, but much less impact on the signs of the m-o-m changes.

Background

Since May 2010, business survey data are collected on the basis of the NACE Rev. 2 classification and the European Commission has started to publish its business survey results based on this new nomenclature[1].

NACE Rev. 2 entails changes in the identification and grouping of similar economic activities in the business surveys. As this change of classification *per se* involves a break in the time series for the surveys, partner institutes participating in the Business and Consumer Surveys Programme have been asked to provide the European Commission with backcast data (dating back to 2000 for detailed two-digit codes and back to 1985 for totals and MIGs — where possible).

Backcasting converts the historic NACE 1 data into the new NACE 2 format to produce continuous NACE 2 series. However, the complete NACE 2 dataset is expected to be made available only gradually. At the time of writing, backcast data are available for a maximum of 15 countries (for industry). In the meantime, the European Commission is continuing to publish its survey time series on the basis of the former NACE 1 nomenclature for the data up to April 2010 and NACE 2 from May 2010 onwards.

This 'Special focus' gives a first glimpse of the effect of the changeover, by comparing the backcast data with former NACE 1 data. Depending on the availability of backcast data, the comparison is done only for selected countries and aggregates. Thus, the results are not meant to be exhaustive at this stage.

This 'Special focus' is organised as follows. First, the levels of confidence indicators based on the two different nomenclatures (NACE 2 and NACE 1) are compared and the consistency between the corresponding m-o-m changes is assessed. Second, the size and sign of m-o-m changes in the economic sentiment indicator are assessed. A few final remarks conclude this article.

Confidence indicators

This section compares — at sector level — the confidence indicators built from backcast data and those obtained using NACE 1 data up to April 2010 and NACE 2 data in May 2010.

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[1] For further details, see the 'Special focus' section in the May 2010 issue of the EBCI:
http://ec.europa.eu/economy_finance/publications/cycle_indicators/2010/pdf/ebci05_en.pdf

Figure 1 shows the differences in the level of the confidence indicators for the four business sectors for the four largest euro area countries (Germany, France, Italy and Spain) and the UK over the last five years. June 2006 is the starting date that gives the maximum common set of backcast data.

The box plots clearly indicate that the impact of the changeover differs between the sectors surveyed.

In the case of industry, the confidence indicators undergo no substantial shift.

By contrast, confidence indicators in both services and retail trade exhibit much greater variability when comparing NACE 2 backcast data with former NACE 1 data. Furthermore, in these two sectors there are significant differences between countries: for France, the backcast confidence indicators are very close to the values based on NACE 1, whereas for Italy they are systematically significantly smaller than those based on NACE 1, signalling a clear shift in the level reported.

Finally, in the construction sector, no sizeable effect can be seen for Germany and Spain, but in Italy the backcast confidence indicator is systematically smaller than the one built from NACE 1 data.

Figure 1: Differences in confidence indicators: NACE 2 *v.* NACE 1
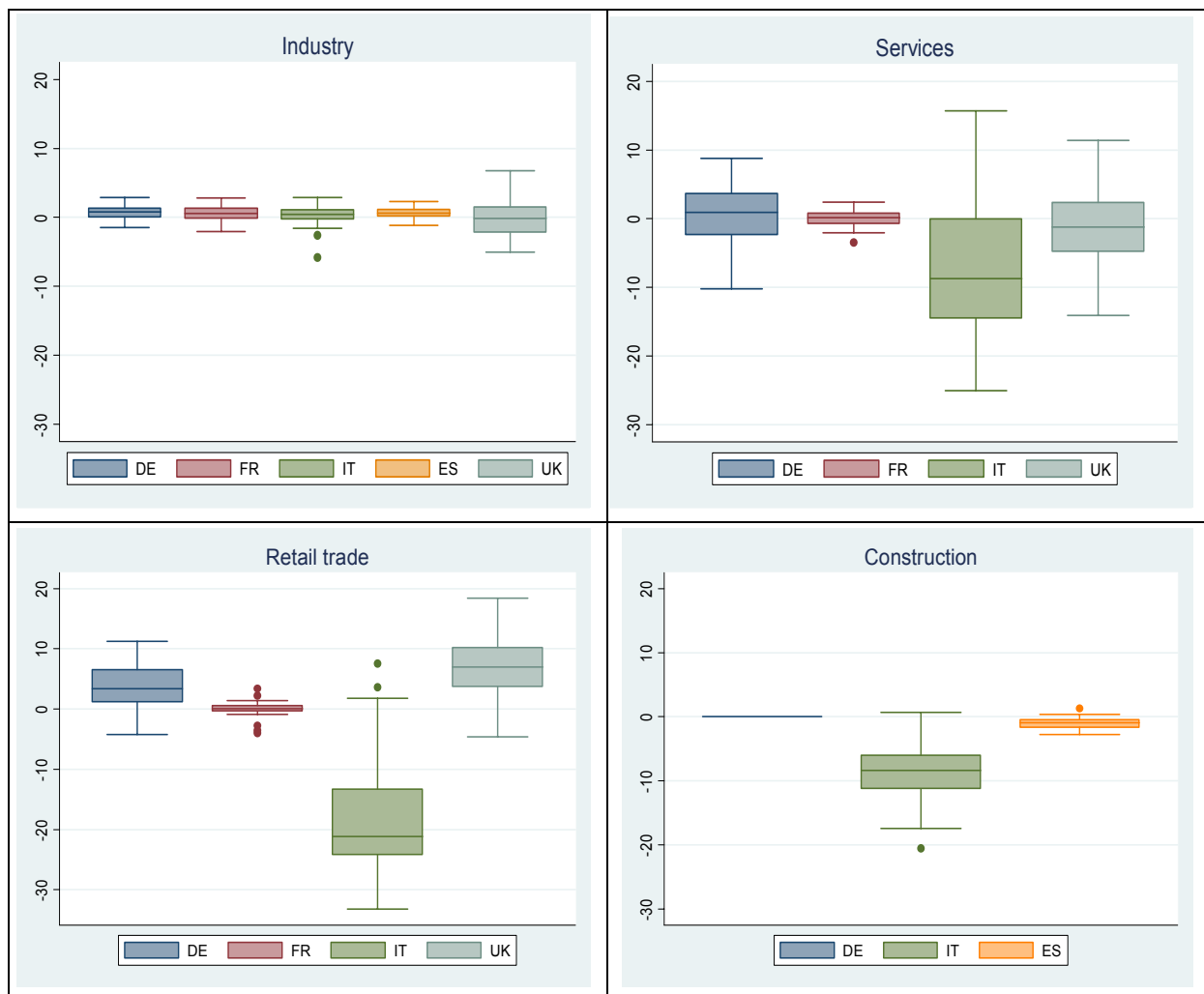
Source: European Commission
Note: Backcast data on services and retail trade have not yet been provided for Spain. Backcast data on construction have not yet been provided for France and the UK.

While the box plots indicate that the changeover has affected the level of the confidence indicators in services and in retail trade, on the whole it has not significantly affected the direction of the m-o-m changes in these sectors, especially over the last two years.

Table 1 indicates the percentage of m-o-m changes in confidence indicators showing consistency in the direction of the sign (increase-increase, decrease-decrease) with the two different nomenclatures. The percentages are calculated over two periods (last five years and last two years) in order to show that consistency between NACE 2 backcast data and NACE 1 data improves in more recent years.

Table 1: NACE 2 *v.* NACE 1 confidence indicators:
          Percentage of consistent direction in m-o-m changes

	June 2005–May 2010			June 2008–May 2010		
	Industry	**Services**	**Retail trade**	**Industry**	**Services**	**Retail trade**
Germany	97 %	63 %	72 %	100 %	79 %	71 %
France	90 %	81 %	95 %	96 %	83 %	100 %
Italy	90 %	61 %	69 %	88 %	63 %	75 %
Spain	95 %			100 %		
United Kingdom	78 %	76 %	83 %	71 %	79 %	92 %

Economic sentiment indicators

The economic sentiment indicator (ESI) is based on the same questions as the sectoral confidence indicators. However, unlike the confidence indicators, the ESI is standardised by its long-term average and variability. As the current availability of backcast data varies between countries, this implies that the levels of the resultant ESIs are not comparable with the former NACE 1-based ESIs, since they are adjusted by averages calculated over different sub-periods.

Consequently, this section focuses on m-o-m changes in the ESI resulting from NACE 2 backcast data and from NACE 1 data.

Figure 2 gives the box plots of the differences in m-o-m changes in the ESI, based on the two nomenclatures, for Germany, France, Italy and the UK over the last five years[2].

As expected, the changeover does not significantly affect the size of m-o-m changes in the ESI. Differences are somewhat more sizeable for Italy and the United Kingdom, consistent with the evidence found for the confidence indicators (see previous section).

As the ESI is supposed to track short-term developments in economic activity, it is mainly the direction of the m-o-m changes that matters. In this respect, the consistency between the signs of the m-o-m changes (based on each of the two nomenclatures) is very high, as shown in Table 2.

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[2] The ESI for Spain is not taken into consideration, as backcast data for services and retail trade are still missing.

Figure 2: ESI m-o-m changes: NACE 2 *v.* NACE 1
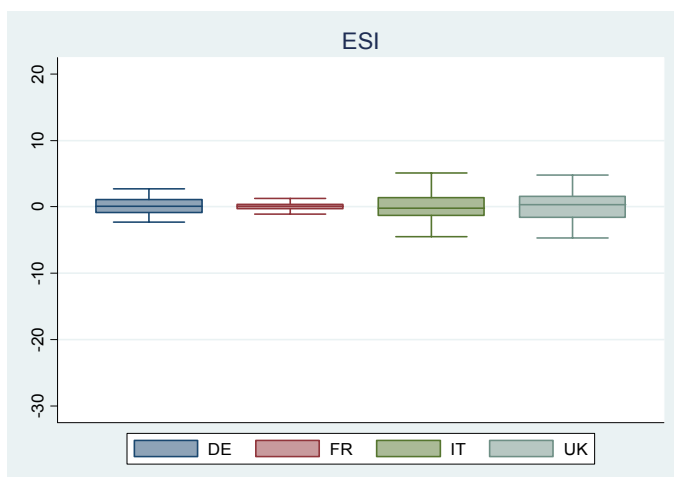
Source: European Commission

Table 2: NACE 2 *v.* NACE 1 ESI: Percentage of consistent direction in m-o-m changes

	June 2005–May 2010	June 2008–May 2010
Germany	85%	100%
France	83%	96%
Italy	80%	79%
United Kingdom	88%	88%

Final remarks

The following main conclusions can be drawn from the results set out above:

- The levels of the confidence indicators for industry undergo no substantial shift.

- The levels of the confidence indicators for services and retail trade show a significant shift in Italy, followed by the UK and Germany.

- Consistency between the signs of m-o-m changes in confidence indicators is satisfactory, especially over the last two years.

- The changeover has a very minor effect on the size of m-o-m changes in the ESI.

- Consistency between the signs of m-o-m changes in the ESI is satisfactory, especially over the last two years.

- It is plausible to expect more substantial changes at subsector and/or question level than found at aggregate level.

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
Construction	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, construction, 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 sectoral 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)[3], aims to identify economic growth trends in the euro area, using as input all the confidence indicators derived from the surveys of industry, services, construction, 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).

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[3] 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.