

# Statistics in focus

INDUSTRY, TRADE  
AND SERVICES

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Author

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## From opinions to facts...

*Links between short-term business statistics and business  
and consumer opinion surveys*

This publication provides details of a study conducted on monthly short-term business statistics (STS) and business and consumer opinion survey data (as released by the European Commission's Directorate-General of Economic and Financial Affairs). Business and consumer opinion surveys are usually conducted on the basis of a panel or representative sample of business leaders from industrial, construction, retail trade and services sectors. These surveys provide results in the form of a balance of opinions, with respect to recently observed developments and future expectations in areas such as production, employment, sales and prices. The balance of replies is measured by the difference between the percentage of positive and negative answers to each question. Such surveys provide an important indication as to the likely evolution of business activity (upward, downward, no change), with information being collected in a rapid manner. While these surveys do not generally provide information on the level of production, sales, prices or employment, information on expectations can be suitable for monitoring and forecasting business cycles.

The objective of this study was to look for any relationship that may exist between quantitative data (available from the STS data set) and qualitative data (collected by business and consumer opinion surveys). As business and consumer opinion survey data are available within a relatively short timeframe, and almost always before quantitative, official statistics, policy makers and strategists are increasingly aware of the potential of this data to analyse economic perspectives. Indeed, timeliness is an important dimension with respect to the quality of statistical information and business and consumer opinion survey data provides almost real-time data.

The graph below shows, for the EU-25, the relationship between the key macro-economic indicator of constant price GDP and the economic sentiment indicator (ESI), which is composed of the industrial, construction, retail trade, services and consumer confidence indicators. When looking at quarter on quarter growth rates of GDP and the economic sentiment indicator there was a correlation coefficient of 0.8. These initial results led on to a sectoral examination at a more detailed level.

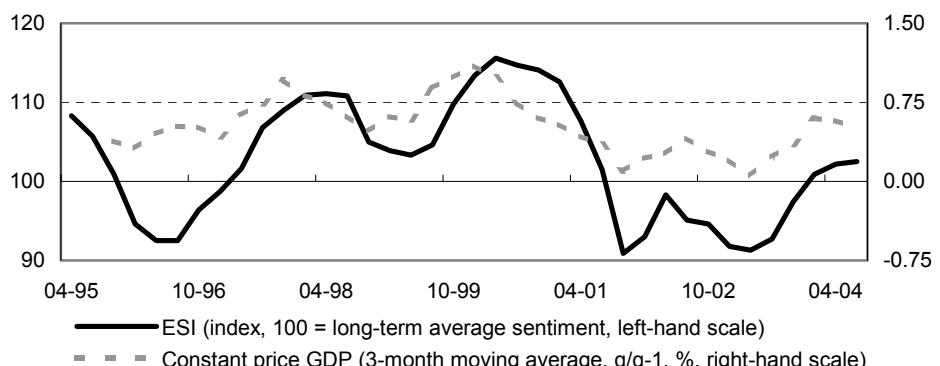


Figure 1: Developments for the economic sentiment indicator and GDP, EU-25

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## Links between the evolution of STS data and data derived from business and consumer opinion surveys

Table 1 lists, by broad economic sector, the indicators used in this study from both short-term business statistics (STS) and business and consumer opinion surveys. Normally it was possible to select for each STS indicator a direct counterpart from the business and consumer opinion surveys, or alternatively an indicator where it was thought there should be links (such as the index for new orders and production expectations from the business opinion survey). However, for some STS indicators there was no directly comparable indicator available in the opinion survey; for these cases STS data was compared with composite business or consumer confidence indicators. Time-series were so short for services that this area was not analysed. Hence, the analysis presented focuses on industry, construction and retail trade.

The balance of respondents replying to opinion survey questions might be used to try to forecast the evolution of short-term business statistics, if some form of relationship can be established between business and consumer opinion survey data and STS data, such that econometric models can be built to predict the evolution of STS.

As such, the rapid release of business and consumer opinion survey data may provide advance warning of turning points for leading economic indicators that are used to track business cycles, such as GDP, industrial output or deflated turnover for retail trade. The delays in publishing STS data can range (according to the indicator being studied) from just over one month after the reference period (output prices) to around three months after the reference period (some labour input and construction indicators). The most frequently used series from the STS data set, the index of industrial production, is normally published between 45 and 50 days after the reference period for the EU-25 and euro-zone aggregates. In contrast, business and consumer opinion survey data are published more rapidly. Indeed, the release of information from this source for EU aggregates and for all of the Member States is normally made the last working day of the reference month.

One critique often made of business and consumer opinion survey data is that respondents do not answer the questions in relation to the time horizons requested. For example, when asked about future production expectations for the next three-month period, respondents are likely to place more emphasis on what they believe will happen during the next month. This is perhaps not surprising, given that respondents are more likely to have information for the immediate period upon which to base their judgements. Indeed, the measurement of future expectations could be considered as conjecture, which, to a large degree, is based upon knowledge of the present. Such a critique should not necessarily pose a problem when trying to use business and consumer opinion survey data to forecast the future evolution of short-term business statistics, as long as the behaviour of respondents remains consistent over time.

STS indicators	Business and consumer survey indicators
<b>Industry (excluding construction)</b>	
Production index	Industrial confidence indicator
Production index	Production expectations for the months ahead (over the next three months)
New orders index	Production expectations for the months ahead (over the next three months)
New orders index	Orders expectations for the months ahead (over the next three months)
Number of persons employed	Employment expectations for the months ahead (over the next three months)
Total producer price index	Selling price expectations for the months ahead (over the next three months)
<b>Construction</b>	
Production index	Construction confidence indicator
Number of persons employed	Employment expectations for the months ahead (over the next three months)
Price indices for new residential buildings	Price expectations for the months ahead (over the next three months)
<b>Retail trade</b>	
Turnover/deflated turnover	Retail confidence indicator
Turnover/deflated turnover	Consumer confidence indicator
Turnover/deflated turnover	Expected business situation (sales) (over the next three months)
Number of persons employed	Expected total employment (over the next three months)

Table 1: Possible correspondence between STS indicators and business and consumer opinion survey indicators

## Links between the evolution of STS data and data derived from business and consumer opinion surveys (continued)

A similar critique is that respondents do not answer specifically in relation to each indicator, but instead tend to base their judgements on a wide range of information. Hence, respondents may well consider other economic factors such as interest rates, movements in exchange rates, the cost of inputs or domestic and international political events before pronouncing their expectations for a range of indicators. Once more, these measurement difficulties are not in themselves a problem when looking at the use of survey information to predict the future behaviour of STS data, as long as the relationships that are observed are consistent over time.

A related point is that respondents to business and consumer opinion surveys are often found to provide over-pessimistic answers. Indeed, the balance of production expectations from the business opinion survey often falls at a rapid pace when the STS index of production remains stable (see Figure 2 below). This too should not pose a problem to analysts, as such bias can be built into models.

When asked if a variable has gone up (favourable change), remained stable (unchanged) or fallen (unfavourable change), respondents interpret the situation in different ways. For example, when asked for their expectations for production, respondents may be faced with what could be considered as fairly large increases (say 1 % to 5 % difference) and yet still reply that the situation was unchanged. Another respondent could consider that an increase of less than 1 % was important enough to warrant replying that there was a favourable, positive change.

Some other points also need to be considered in terms of potential measurement difficulties. For example, analysts need to take account of the different units that are used for the two data sources. While business and consumer opinion survey data are expressed as a balance of positive to negative answers, short-term business statistics are provided in the form of an index (which is given in relation to a base year, currently 2000).

Figure 2 shows data for the EU-25 aggregate for three series: the indices of industrial production and new orders (as provided by STS); and the balance of production expectations from the business and consumer opinion survey. The latter of these series has been plotted using a different scale for the y-axis.

Before continuing the analysis it is important to look at the different nature of the two types of indicator. Each confidence indicator is calculated as the arithmetic average of the balances (seasonally adjusted) of the answers to specific questions chosen among the full set of questions of each survey. These indicators are constrained between the extremes of all respondents replying positively or negatively. The STS indicators are not constrained in the same way, having an arbitrarily fixed point as the base period (currently the year 2000=100), a theoretical minimum of 0 (as none of the indicators analysed in this publication can be negative) and no theoretical maximum value.

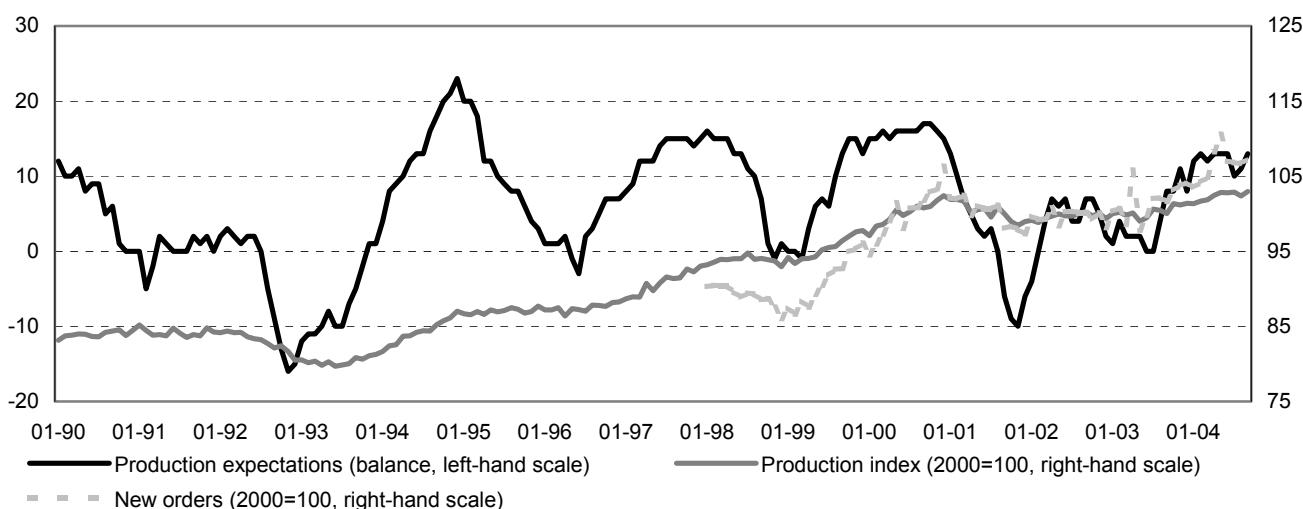


Figure 2: Developments for production expectations and the index of production, industry, EU-25

## Industrial indicators

### **Identification of turning points (peaks and trough)**

Using month on month growth rates for the index of production and percentage point differences for the balance of production expectations, similarities were found in the development of both series. The series were examined to determine whether or not it was possible to observe turning points in STS series and to match these with turning points in business opinion surveys. Figures 3a and 3b provide an example, showing the original series and six-month moving averages that were used to help delimit the economic phases (time spans between peaks and troughs), shown as vertical lines in the graphs. During the period 1996-2004, turning points for the balance of production expectations tended to lead the production index by 0 to 3 months. It is important to note that

this delay in the observation of turning points for the index of production may result from differences in the seasonal adjustment methods that are employed for the two indicators (TRAMO/SEATS is used for the index of production, while DAINTRIES is used for the business and consumer survey data).

### **Growth rates for industrial production and new orders follow closely the evolution of production expectations**

Figure 2 shows the relationship between the index of production and the balance of production expectations. As such, the investigation of possible links between the series moved on to study other possible relationships, in particular by looking at the link between growth rates for the index of production based upon a comparison with the same month of the previous year ( $t/t-12$ ). Figure 5 displays this relationship, with data for the four largest Member States.

balance of production expectations. Figure 4 shows that there was a closer relation between production expectations and the annual growth rates of the production index, as measured by the change between one month and the same month of the previous year ( $t/t-12$ ).

This suggests that respondents to the business survey might not make judgements of future expectations compared with the present, but instead compared with past performance over a longer period. These initial observations were analysed across the Member States and the results confirmed that in most cases there was a close link between production expectations and growth rates for the index of production based upon a comparison with the same month of the previous year ( $t/t-12$ ). Figure 5 displays this relationship, with data for the four largest Member States.

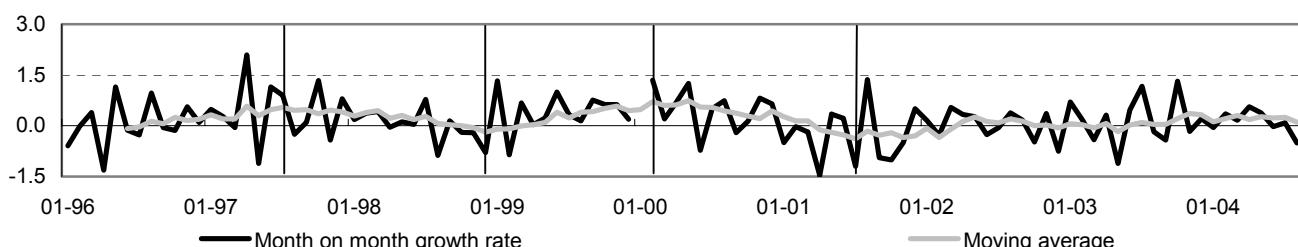


Figure 3a: Developments for the index of production, industry, EU-25

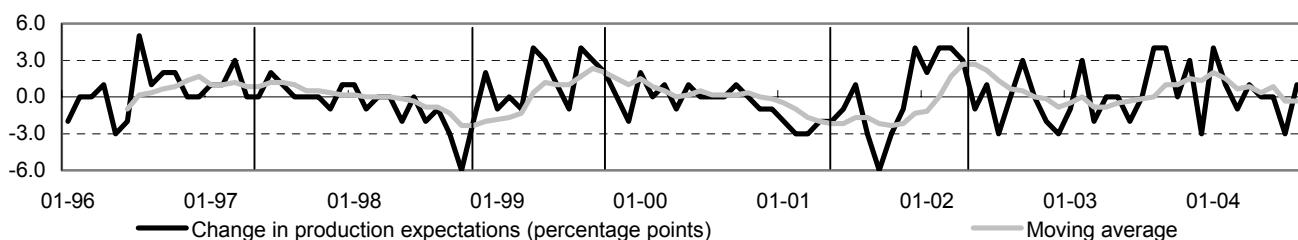


Figure 3b: Developments for the balance of production expectations, industry, EU-25

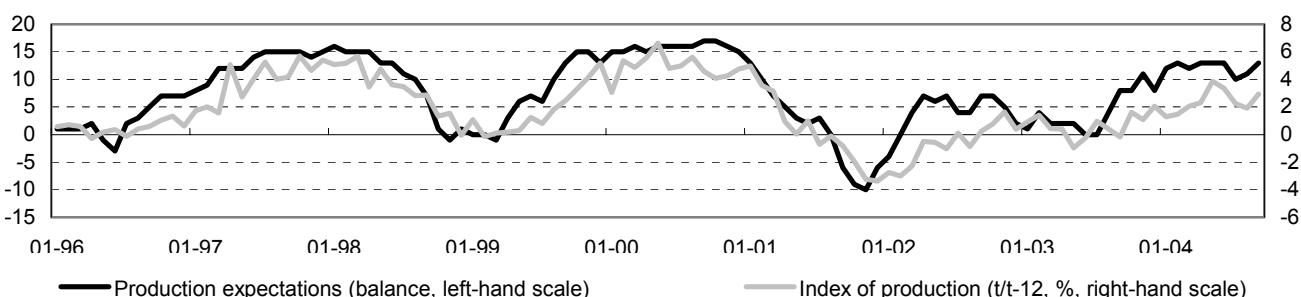
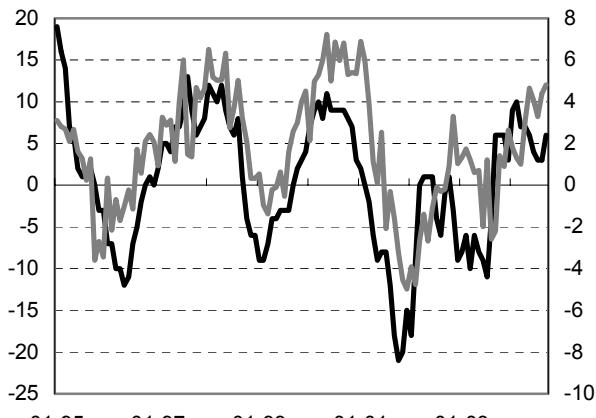


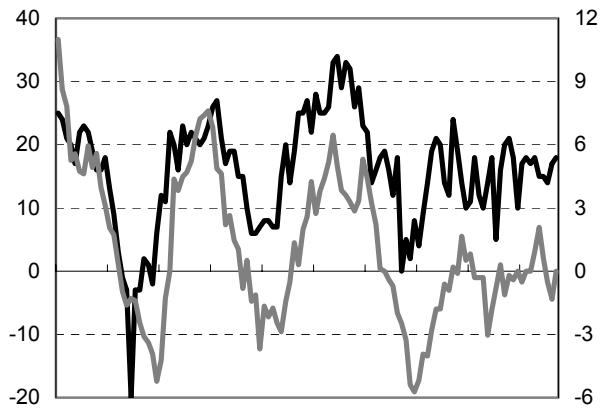
Figure 4: Developments for production expectations and growth rates for the index of production, total industry, EU-25

## Industrial indicators (continued)



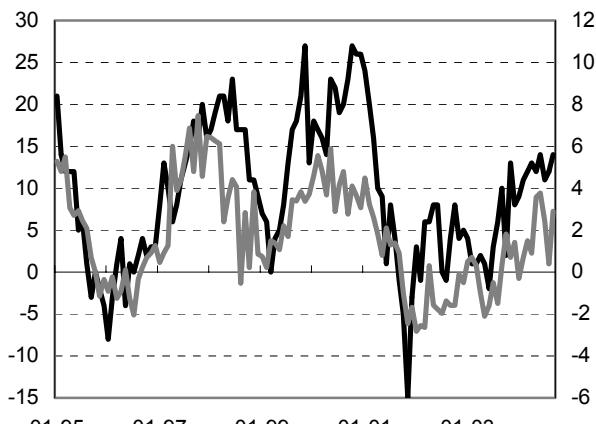
— Prod. expectations (balance, left-hand scale)  
— Index of production (t/t-12, %, right-hand scale)

**Germany**



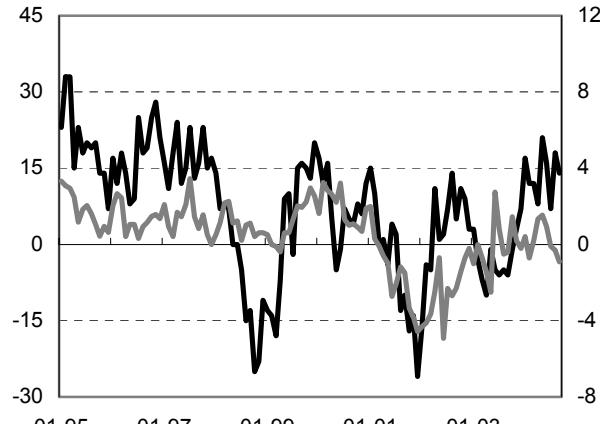
— Prod. expectations (balance, left-hand scale)  
— Index of production (t/t-12, %, right-hand scale)

**Italy**



— Prod. expectations (balance, left-hand scale)  
— Index of production (t/t-12, %, right-hand scale)

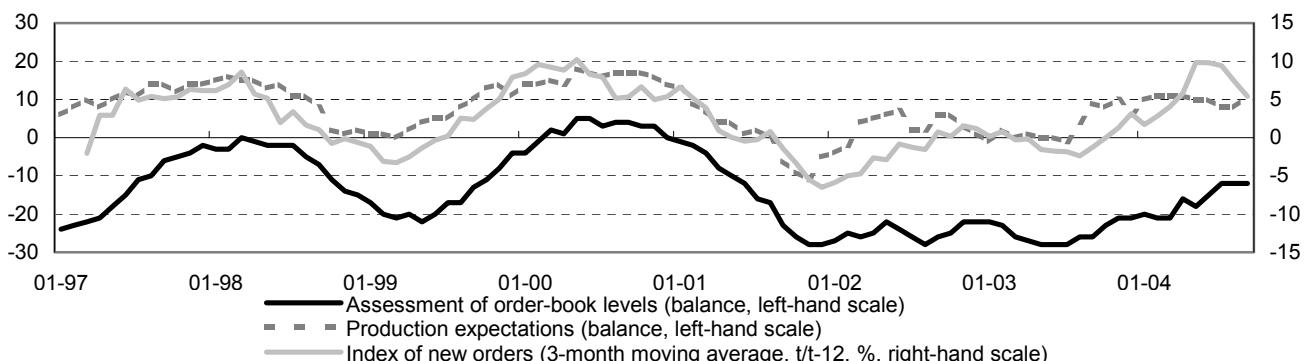
**France**



— Prod. expectations (balance, left-hand scale)  
— Index of production (t/t-12, %, right-hand scale)

**The United Kingdom**

*Figure 5: Developments for production expectations and growth rates for the index of production, total industry, the four largest Member States*



— Assessment of order-book levels (balance, left-hand scale)  
— Production expectations (balance, left-hand scale)  
— Index of new orders (3-month moving average, t/t-12, %, right-hand scale)

*Figure 6: Developments for the assessment of order-book levels and growth rates for the index of new orders, industry, euro-zone*

## Industrial indicators (continued)

Subsequently, an analysis was made across the Member States to find the peak-correlation coefficient between business opinion survey data and growth rates for the index of production. Growth rates for the index of production were calculated for 24 different periods ranging from t+6/t to t/t-18. Table 2 shows the results which confirm that the highest correlation pairings were usually obtained for growth rates calculated upon the basis of a comparison between t/t-11 and t/t-16. Cyprus (t/t-1) and Estonia (t/t-7) were the only exceptions to report peak-correlation coefficients for growth rates that were based upon more recent periods. For the EU-25, the highest peak-correlation coefficient was obtained between production expectations and growth rates of the production index based upon a comparison with 11 months beforehand (t/t-11), which stood at 0.91.

Having analysed the variations in correlation coefficients according to different growth rates for the indices, the next step involved testing various leads and lags to see if these could be used to increase the correlation coefficients.

As a first step, leads and lags of the growth rates for t/t-1 and t/t-12 were analysed. The introduction of leads and lags did little to improve the correlations for the t/t-1 growth rates, where the highest correlation with production expectations was recorded with a lag of 2, 3 or 4 months for the growth rates of the production index, with coefficients of 0.31. For the t/t-12 growth rates, the highest coefficient was recorded with a lead of 1 month for the growth rates, meaning that, in effect, there were 11 months between the two reference periods. The highest correlation coefficient, using this measure, was 0.91 for the EU-25.

Turning to the indices themselves, the correlation coefficient between the index of production for total industry and production expectations was 0.30 for the EU-25, while the introduction of a four month lag for the index of production resulted in the highest correlation-pairing of 0.38. A similar analysis was carried out for new orders for the euro-zone (where a longer time-series existed) and this showed that the index of new orders had a correlation coefficient of 0.14 with production expectations. The introduction of a three or four month lead for new orders resulted in this coefficient rising to 0.20. As such, lagging or leading indices resulted in only modest improvements in terms of the results achieved, and correlation coefficients remained well below those recorded between the t/t-12 growth rates for indices of production and production expectations.

The results of analysis carried out on new orders confirm to a large degree the findings for industrial production, insofar as higher correlation coefficients were recorded between business opinion survey data and growth rates for the index of new orders based upon a comparison with the same month of a year before. The correlation coefficient for the EU-25 was 0.73 between production expectations and t/t-12 growth rates for new orders, and 0.78 for the euro-zone.

In relation to the assessment of export orders from the business opinion survey, t/t-12 growth rates for the index of new orders to export markets recorded a correlation coefficient of 0.86 for the EU-25, while the coefficient between the assessment of total new orders from the business opinion survey and t/t-12 growth rates for the index of total new orders, again for the EU-25, was 0.83.

	Highest correlation	Period
EU-25	0.91	t-11
Euro-zone	0.88	t-11; t-13; t-14; t-15
BE	0.55	t-14
CZ	0.48	t-11
DK	0.47	t-15; t-16
DE	0.85	t-15
EE	0.62	t-7
EL	0.43	t-11
ES	0.68	t-13
FR	0.75	t-13; t-15; t-17
IE	0.54	t-11; t-14
IT	0.75	t-11; t-14
CY	0.18	t-1
LV	0.67	t-17
LT	0.78	t-16
LU	0.43	t-16
HU	0.75	t-17
NL	0.54	t-13; t-14; t-17
AT	0.72	t-13
PL	0.77	t-17
PT	0.31	t-16; t-17
SI	0.73	t-15
SK	0.61	t-13
FI	0.65	t-14
SE	0.59	t-11; t-15
UK	0.53	t-11

Table 2: Peak-correlation coefficients between production expectations and a selection of growth rates for the index of production, industry

## Industrial indicators (continued)

### Growth rates for industrial output prices follow the evolution of price expectations...

The next step involved analysing the initial findings to see if similar results could be obtained for other indices. The correlation coefficient for the EU-25 between the gross index of domestic output prices and expected prices from the business opinion survey was found to be negative (-0.25, 1991-2004).

To explore further, growth rates for t/t-1 and t/t-12 were calculated for the index of domestic output prices and correlation coefficients were computed with respect to the balance of expected prices. The highest correlation for the EU-25 (0.85) was again recorded between the business opinion survey data and growth rates of indices based upon a comparison with the same month of the previous year -Figure 7 shows the close relationship between the two series. The results for the EU-25 were confirmed when looking at the data by Member State. For the period 1991 onwards, correlation coefficients of 0.77 and 0.79 were recorded for Germany and Italy (the two countries with the longest time-series available).

### ... while growth rates for industrial employment lag employment expectations

For industrial employment the nature of the results was largely repeated. Figure 8 shows a time-series for employment expectations from the business opinion survey and growth rates for the index of employment for total industry based upon a comparison with the same month of a year before (t/t-12). Note that the graph is presented for the euro-zone, as a longer time-series was available for this aggregate.

One feature of Figure 8 is that the series for employment expectations appears to lead that for the growth rates of the employment index. An explanation of this pattern could be that the question for employment clearly asks respondents to assess the future development of employment over the next three months and hence for a given period respondents are providing information on the likely situation in three months time, as witnessed in the index of employment when official STS data is released.

Another possible explanation is that employment markets are inflexible.

Hence, if economic circumstances change for the better (or worse) it is likely that a relatively long period of time will pass before employers feel compounded to react or are able to react to the changes that are observed. Given this inflexibility, employers' decisions on whether to hire or fire are often postponed and are only acted upon once economic developments become so clear that they eventually have to take a decision. Hence, despite the fact that business opinion surveys may indicate a significant change in employment expectations, it may be several months before employers follow their feelings, once further confirmation of the economic situation has been provided. As a result, growth rates for the index of employment could lag employment expectations by several months.

Tests on peak-correlation coefficient pairings showed that the highest correlation was obtained when employment expectations had a three month lead on the growth rates for the index of employment. When this was taken into account, the correlation coefficient between the two series for the euro-zone (for which a longer time-series was available) rose to 0.95.

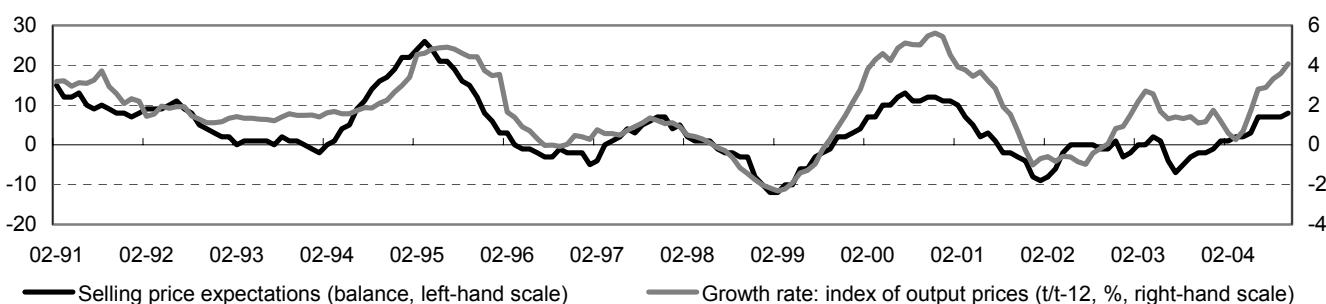


Figure 7:Developments for price expectations and growth rates for the index of output prices, industry, EU-25

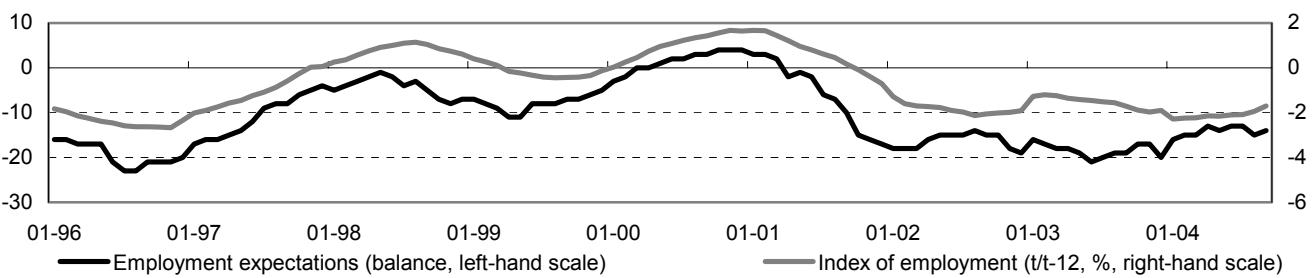


Figure 8: Developments for employment expectations and growth rates for the index of employment, industry, euro-zone

## Construction indicators

### **Link between STS indicators and construction confidence most evident for indices**

Output in the construction sector is, in part, driven by household demand and interest rates. The decision to undertake civil engineering projects can also lead to a significant increase in demand (the timing of which may be unrelated to economic cycles). The business cycle for the construction sector is only indirectly related to foreign competition and external shocks.

The highest correlation coefficients for the construction sector were reported for the indices of production and employment, when compared with the construction confidence index and employment expectations indicator. The STS data for prices and new orders within the construction sector did not

show signs of a relationship with the data from the business opinion survey.

Contrary to the results obtained for the industrial economy, the highest correlation coefficients between the index of production and the construction confidence indicator were obtained when analysing the indices from STS and not rates of change. Construction confidence is a composite indicator: the arithmetic mean of the balance of replies to questions on construction order books and employment expectations. Figure 9 shows the EU-25 series for the index of production for construction and the construction confidence indicator, where a correlation coefficient of 0.67 was recorded. A correlation coefficient of 0.66 was recorded for France between 1995 and 2004, while that for Germany was 0.14.

However, for the period 1998-2004, the coefficient for Germany rose to 0.72.

Over the period 1995-2004, EU-25 correlation coefficients were higher when comparing employment expectations (see Figure 10) with the indices of employment (0.75) than they were when comparing with growth rates from the same month of a year before (0.59). Across the larger Member States, the results were less conclusive, as the highest correlation coefficients between employment expectations and the index of employment were recorded for France and Spain (0.55 and 0.43), although, during the period 1998-2004 the German correlation coefficient was 0.72.

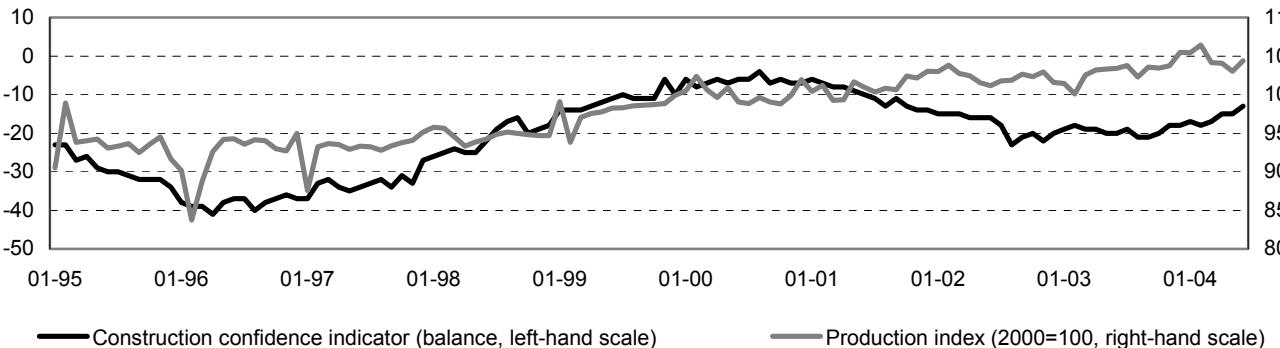


Figure 9: Developments for construction confidence and the index of production for construction, EU-25

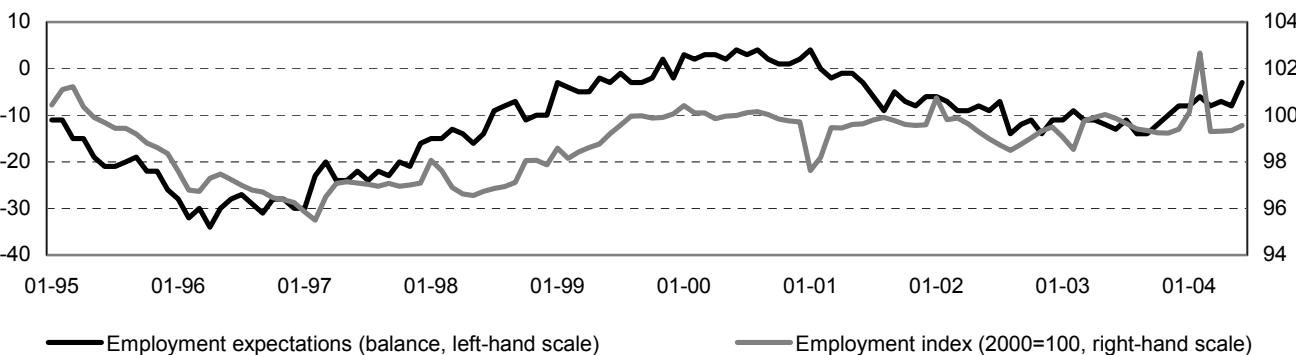


Figure 10: Developments for employment expectations and the index of employment for construction, EU-25

## Retail trade indicators

### **Consumers (as opposed to businesses) appear more adept at foreseeing the evolution of retail trade turnover**

The evolution of deflated turnover in the retail trade sector displays a less cyclical pattern than many of the other indicators presented so far. This may well be due to sustained household consumption in many of the Member States during recent years. This may be expected to some degree, as demand for some non-durable items remains fairly constant over time, no matter what the economic conditions (basic foodstuffs, for example). However, the increase in consumer debt in a number of Member States also suggests that even in times of economic downturn or stagnation many consumers continued to spend.

There are also likely to be other factors that drive the evolution of retail sales so that they do not necessarily follow the general economic cycle. For example, cold weather could lead to an increase in the sale of heating products.

For the retail trade sector, the main indicators used for the investigation were turnover and employment. As with the results for the industrial sector, the highest correlation coefficients were obtained when comparing the results of business

and consumer opinion surveys with growth rates based upon STS indices, as calculated on the basis of a comparison with the same month of a year before.

The highest correlation coefficient for the EU-25 (0.64) was recorded when comparing the  $t/t-12$  growth rates for deflated turnover with consumer confidence. Figure 11 shows the relationship between these two series during the period 1996-2004. For the largest Member States, similar results to those obtained for the EU-25 aggregate were recorded. For example, the correlation coefficient for Germany was 0.52, closely followed by France (0.51).

Looking at the other series from the business and consumer opinion surveys, there was little evidence of a relationship between the index of deflated turnover from STS and either the business confidence indicator for retail trade or business expectations for future sales in retail trade. The EU-25 business confidence indicator for retail trade had a correlation coefficient of 0.25 when compared with growth rates for the index of deflated turnover ( $t/t-12$ ), while the correlation coefficient between expected sales and  $t/t-12$  growth rates for the index of deflated turnover was 0.16. Correlation coefficients between expected sales or business

confidence and the indices of deflated turnover themselves (as opposed to the growth rates) were even lower, as were correlations with the turnover indices (non-deflated).

At a country level, the results reported for the EU-25 were not consistently reproduced. For example, both business confidence and expected sales were more correlated with the  $t/t-12$  growth rates for deflated turnover than they were with consumer confidence in Spain and the United Kingdom during the period 1999-2004.

When comparing the development of employment expectations and the index of employment (for indices,  $t/t-1$  and  $t/t-12$  growth rates) there was little evidence of any link between these series for the EU-25 during the period 1996-2004. This was confirmed by the fact that the highest correlation coefficient (0.08) was recorded between employment expectations and  $t/t-12$  growth rates for the index of employment. Of the largest EU Member States, only Germany and Spain had lengthy time-series available and their results confirmed the patterns observed for the EU-25, namely, that no clear relationship could be drawn.

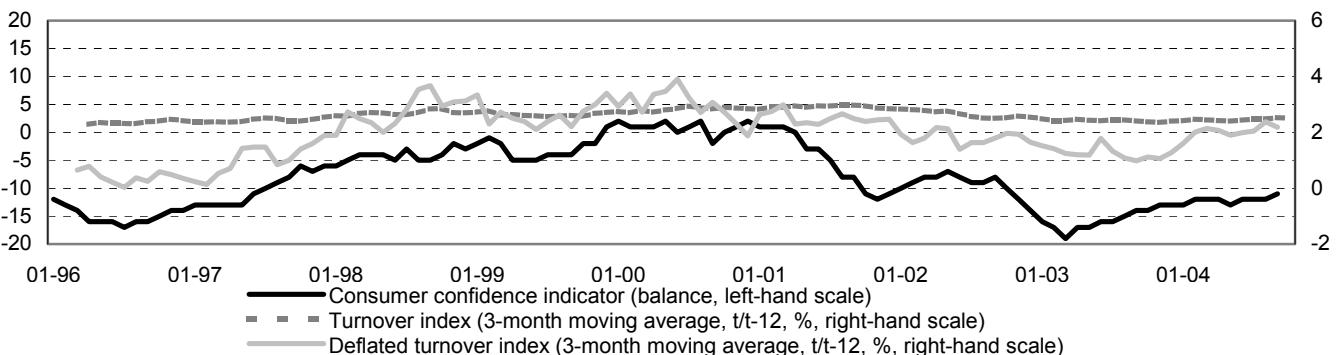


Figure 11: Developments for consumer confidence and growth rates for the index of deflated turnover, retail trade, EU-25

## ➤ ESSENTIAL INFORMATION – METHODOLOGICAL NOTES

The data used in this publication were extracted from Commission databases during December 2004.

### STS INDICATORS

The legal basis for the collection of short-term business statistics (STS) is Council Regulation No 1165/98 of 19 May 1998.

Wherever possible seasonally adjusted series were used to perform the analyses. The main exception to this rule was for the output price index, where only a gross series is available.

The **production index** is an important business cycle indicator which shows the monthly activity of the industrial sector, one of the most volatile components of the economy. As specified in the STS Regulation, and in line with traditional practice in business statistics, the production index should show the evolution of value added at factor cost, at constant prices. Value added at factor cost can be calculated from turnover (excluding VAT), plus capitalised production, plus other operating income, plus or minus the changes in stocks, minus the purchases of goods and services, minus other taxes on products and taxes linked to production.

The **new orders index** is defined as the value of the contract linking a producer and a third party with respect to future deliveries by the producer of the goods and services. New orders include all duties and taxes on the goods or services that will be invoiced by the unit with the exception of the VAT and other similar deductible taxes directly linked to turnover. All other charges (transport, packaging, etc.) that are passed on to the customer are also included. Orders that are passed on to sub-contractors are included.

The **output price index** (or producer price index) shows monthly price changes in the industrial sector, which can be an indicator of inflationary pressure before it reaches the consumer. All price-determining characteristics of the products should be taken into account, including quantity of units sold, transport provided, rebates, service conditions, guarantee conditions and destination.

The **index of the number of persons employed** monitors the development of total employment. This indicator may be approximated by the number of employees. The number of persons employed is defined as the total number of persons working in an observation unit (inclusive of working proprietors, partners working regularly in the unit and unpaid family workers), as well as persons who work outside the unit who belong to it and are paid by it (e.g. sales representatives, delivery personnel, repair and maintenance teams).

The objective of the **volume of sales index** is to show the quantity of goods sold in the retail trade sector. It is an indicator for final domestic demand and provides information about consumer confidence. The volume of sales represents the value of turnover in constant prices and as such it is a quantity index. It can be calculated as turnover at current prices, deflated by the deflator of sales, or as a quantity index derived directly from the quantity of goods sold. Turnover comprises the totals invoiced by the observation unit during the reference period. It includes all duties and taxes on the goods or services invoiced by the unit with the exception of the VAT invoiced by the unit vis-à-vis its customer and other similar deductible taxes directly linked to turnover.

For more information on methodology for STS indicators, see 'Methodology of short-term business statistics', available at:  
[http://forum.europa.eu.int/irc/dsis/bmethods/info/data/new/embs/embs\\_en.html](http://forum.europa.eu.int/irc/dsis/bmethods/info/data/new/embs/embs_en.html)

### BUSINESS AND CONSUMER CONFIDENCE INDICATORS

Business and consumer opinion surveys are compiled in accordance with the framework of the Joint Harmonised EU Programme. The framework provides for the collection of information in the following fields: the industrial, retail trade, building and services sectors, as well as information pertaining to investment decisions and consumer confidence.

Currently, more than 110 000 units and almost 33 000 consumers are surveyed every month across the EU-25. The sample for industry includes more than 35 000 units that are surveyed every month. The sample size for services is more than 28 000 units, while for retail trade and construction sample sizes consist of more than 23 000 and 20 000 units respectively.

The main users of survey results are the respondents themselves, as they may obtain detailed survey results broken down by sector of activity. These results provide valuable information on business conditions both within the activities of the enterprise itself and within other areas of the economy (such as upstream and downstream markets). Economic and financial analysts have also become important users of this information, as the data are available rapidly and hence some of the series may provide advance warning of changes in the direction of economic activity.

## ➤ ESSENTIAL INFORMATION – METHODOLOGICAL NOTES (continued)

Data cover all 25 Member States of the European Union as well as two of the candidate countries (Bulgaria and Romania). The figures from the survey are presented as seasonally adjusted balances, which are defined as the difference (in percentage point terms) between all positive and negative answers. The data are only seasonally adjusted once at least 36 monthly or 12 quarterly observations are available, and so for some of the new Member States the data are still provided in gross form.

Business and consumer opinion surveys are qualitative economic surveys that are intended for short-term economic analysis. While conventional econometric models of the economy perform reasonably well when the economy is within a period of stable growth, their performance is not so good for signalling changes of direction or turning points in economic cycles.

The range of information covered by business and consumer opinion surveys often goes beyond the traditional variables that are collected for conventional quantitative analysis through the development of official statistics. Qualitative information may be collected for variables that are difficult or impossible to measure by conventional methods, for example, capacity utilisation, production bottlenecks, plans and expectations for the immediate future and managers' views of the overall economic situation.

There is an increasing interest in the use of business and consumer opinion surveys for predicting turning points and these series are often viewed as an essential tool for complementing quantitative statistical surveys. Business and consumer opinion surveys provide a rapid means of compiling simple statistics with results becoming available within a short period of time, and almost always before official statistics.

The indicator of **production expectations for industry** is the difference (in percentage points of total answers) between positive and negative options for the question 'How do you expect your production to develop over the next three months?'

The indicator on the assessment of **order books for industry** is the difference (in percentage points of total answers) between positive and negative options for the question 'Do you consider your current overall order books to be? (above normal, normal for the season, below normal).'

The indicator of **price expectations for industry** is the difference (in percentage points of total answers) between positive and negative options for the question 'How do you expect your selling prices to change over the next 3 months?'

The indicator of **employment expectations for industry** is the difference (in percentage points of total answers) between positive and negative options for the question 'How do you expect your firm's total employment to change over the next 3 months?'

The **construction confidence indicator** is the arithmetic average of the balances (in percentage point terms) of the answers to the questions on the order book and employment expectations within the construction sector; balances are seasonally adjusted.

The **consumer confidence indicator** is the arithmetic average of the balances (in percentage point terms) of the answers to the questions on the financial situation of households, the general economic situation, unemployment expectations (with inverted sign) and savings. All of these points are surveyed in relation to expectations over the next 12 month period; balances are seasonally adjusted.

More information can be obtained from the DG ECFIN web-site, at the following address:  
[http://europa.eu.int/comm/economy\\_finance/indicators/businessandconsumersurveys\\_en.htm](http://europa.eu.int/comm/economy_finance/indicators/businessandconsumersurveys_en.htm)

## ***Further information:***

### ➤ **Reference publications**

Title      Quarterly panorama of European business statistics  
Subscription number    VPA000                          Price    EUR 100

### ➤ **Databases**

[EUROSTAT Website/Industry, trade and services/Industry, trade and services - horizontal view/Short-term Business Statistics - Monthly and Quarterly \(Industry, Construction, Retail Trade and Other Services\)](#)

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