STATISTICS DENMARK

Documentation of statistics for Construction Survey 2020

1 Introduction

The purpose of the tendency survey for the construction industry is to provide a fast and up-to-date picture of conditions and expectations in the construction industry. As from the 1st quarter of 1970 Statistics Denmark has conducted a tendency survey for the construction industry. From 1970 to 1997 the tendency survey was conducted quarterly. To harmonize with the surveys conducted by other EU member states, the Danish tendency survey has been conducted monthly since January 1998. This change also implied that further questions were added to the survey.

2 Statistical presentation

The purpose is to provide data on some essential short-term economic factors within the construction industry. The survey is a qualitative assessment on developments over the past three months and expected developments over the next three month, based on the variables *employment*, *sales*, *prices*, *new orders* and *limits to production*. Also is asked *how many months work is accounted for in the order book*.

COVID-19 has not affected the basis and methodology of these statistics itself, but three COVID-19-related questions have been added to the survey. The results of which are enumerated in the same way as for the business cycle indicators, described in this Documentation of Statistics.

The results on the new questions are published under Experimental Statistics (in Danish), with a link to a background document. The final figures of the month are released on the penultimate working day of the month, with a preliminary release in the middle of the month.

2.1 Data description

The purpose of the tendency survey for the construction industry is to provide a fast and up-to-date picture of conditions and expectations in the construction industry. As from the 1st quarter of 1970 Statistics Denmark has conducted a tendency survey for the construction industry. From 1970 to 1997 the tendency survey was conducted quarterly. To harmonize with the surveys conducted by other EU member states, the Danish tendency survey has been conducted monthly since January 1998. This change also implied that further questions were added to the survey. The survey is directly connected to and defined by the Business and Consumer Survey joint harmonized programme as managed by the Directorate-Generale for Economic and Financial Affairs (DG ECFIN), European Commission. Within same programme is also carried out monthly tendency surveys on Manufacturing Industries, Services, Retail Trade and Consumer expectations as well as the biannual survey on Manufacturing Industry Investments.

The survey is a qualitative assessment on developments over the past three months and expected developments over the next three month, based on the variables *employment*, *sales* and *prices* The questionaire is filled in by ticking *decrease*, *unchanged*, or *increase*. Furthermore is asked to the *current order book level* and also is asked *how many months work is accounted for in the order book*. Finally the respondents are also asked if there currently are any *factors limiting* the building activity of the respondent.

2.2 Classification system

The industries in the survey is defined by [DB07](#) , which is the Danish industrial classification system similar to the international NACE rev. 2 system.

The division of industry groups are (DB07 groups in brackets):

41000 Construction of buildings: 411000, 412000 42000 Civil engineering: 421000,422000,429000,421100,421200,421300,422100,422200,429100,429900 43201 Electrical installation etc.: 432100,432900 432200 Plumbing, heat and air-conditioning installation: 432200 43301 Joinery installation etc.: 433100,433200,433300 43302 Painting and Glazing etc: 433410,433420,433900 439910 Bricklayers: 439910 43003 Other specialized construction activities: 431100,431200,431300,439100,439990

2.3 Sector coverage

Construction.

2.4 Statistical concepts and definitions

Business Tendency Survey: Business Tendency Survey. Compared to traditional statistical surveys, which only cover one or a few related variables from one area of the economy, business surveys collect information about a wide range of variables selected for their ability, when analysed together, to give an overall picture of a sector of the economy. The surveys include questions such as the volume of production, order books, order inflow, stocks of finished goods , exports, employment and prices. The range of information covered by business surveys also goes beyond variables normally captured by classical statistics. Qualitative information may be collected for variables, which are difficult or impossible to measure by conventional methods such as: capacity utilisation, production bottlenecks and views on the overall economic situation.

Confidence Indicator: An indicator for the present position in the business cycle. The marked economy evolves in cycles between boom, decrease, recession and upswing.

Composite Confidence Indicator: Composite indicators are calculated as the simple arithmetic average of the (seasonally adjusted if possible) balances of answers to specific questions chosen from the full set of questions in the survey. In the case of Retail Trade survey the composite indicator reflects the average of the three indicators on Sales over the past three month, the present Volume of stock and Sales expectations over the next three months.

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

2.5 Statistical unit

The units in the survey are enterprises defined by legal unit, which is identified by "CVR-number" from the Central Business Register.

2.6 Statistical population

The universe population includes line of businesses ranging between 41 and 43 in the Danish classification system DB07, almost identical to the international NACE rev. 2 system. The target population consists of 28535 enterprises.

2.7 Reference area

Denmark.

2.8 Time coverage

The survey has been conducted by Statistics Denmark since January 1970. Data not available in the Statbank of Statistics Denmark is available at the homepage of DG ECFIN

2.9 Base period

Not relevant for these statistics.

2.10 Unit of measure

Percentages, months and Balances.

2.11 Reference period

The reference point is the first day of the survey month. Questions are asked concerning the past three month and the coming three month.

2.12 Frequency of dissemination

The survey is published monthly - the second last working day. However results of the December survey is first published in the beginning of January.

2.13 Legal acts and other agreements

The survey is voluntary, and therefore not subject to any Danish legal act.

The survey is conducted according to agreement with the EU Commission. The legal framework of the survey is "The Joint Harmonized European Union Programme on Business and Consumer Surveys" approved by the European Commission on 12 July 2006 COM (206)379.

2.14 Cost and burden

The survey is voluntary, therefore no burden as such. If one decides to participate the questionnaire is supposed to only take a minute to complete. Joint reporting is accepted if same organization includes several companies representing unique legal units, but within same industry-class.

2.15 Comment

Information about the statistics here [Short term trends](). The statistics is part of the The Joint EC Business and Consumer Surveys programme managed by Directorate-Generale for Economic and Financial Affairs (DG ECFIN) please refer to their [Guidelines]().

3 Statistical processing

Monthly business survey data is collected from a sample of approximately 800 enterprises. Data is reported either online at http://www.VIRK.dk or in paper questionnaire, and consists of qualitative information about changes in net sales, employment, prices, orders, etc., which are not validated. The collected data are enumerated from the sample to the total population weighted by employment data, and distributed at industry and size groupings. If seasonal variation patterns are detected for the indicators that constitute the composite confidence indicator, data is adjusted for this.

3.1 Source data

The statistics are compiled from data collected via questionnaires. The sample is based on information in the Central Business Register.

The survey is carried out with a panel based stratified sample consisting initially of 800 enterprises representing about 27 pct. of the total number of full-time employees in selected trades. Because of drop-out the sample is updated one or two times a year. Typically the sample is added 150-200 new enterprises at update.

The sample is stratified into industry groupings and size groups in terms of full time employees.

The industry strata are defined by (NACE rev.2 classification system figures in brackets):

- F Construction
- 41000 Construction of buildings
- 42000 Civil engineering
- 43201 Electrical installation etc.
- 432200 Plumbing, heat and air-conditioning installation
- 43301 Joinery installation etc.
- 43302 Painting and Glazing etc.
- 439910 Bricklayers
- 43003 Other specialized construction activities etc.

The three size strata are defined by:

- above 50 employees
- 10-49 employees
- 1-9 employees

The primary data are stored at the level of business establishment (workplace). The following data are available:

- File no. (workplace)
- ID of the business establishment
- Data on addresses
- Employment
- Kind of activity
- Year
- Month
- Trends, actual *
- Trends, expected *
- Assessment at the end of the month **

*This applies to the following variables: employment, sales and prices.

**This applies to the following variables: volume of orders and reductions in the production.

3.2 Frequency of data collection

Data is collected each month during the first 2-3 weeks.

3.3 Data collection

Data is collected either by paper questionnaire send to the respondent including postage pre-paid envelope, or by online reporting. In the latter case, respondents receive an e-mail notification telling it is time to log in to the reporting system VIRK, and fill the online questionnaire. Respondents are urged to respond online.

Response rate is about 79 pct. on average. Deadline for responding to the current month's questionnaire is about the 6th of the month. Here, about two third of the answers have arrived. The rest, one third, arrives within two weeks and are included in the statistics.

Reminder is send about the 13th giving new deadline about the 20th of the survey month.

Information to the respondents about the statistics is found here (in Danish).

3.4 Data validation

To fill the questionnaire one have to tick mark one of three options for each question. This does not call for data validation. The paper questionnaires are scanned automatically, and questionnaires refused in this process is handled manually.

Non-response errors are corrected for in the enumeration process.

By online reporting the system warns the respondent if a question is not ticked. However in both cases, online reporting or reporting by mail, it is accepted that some questions are left un-ticked. In data compilation process basic data is checked if bigger changes from last month is observed - usually the reason is either unidirectional change in assessments by several big companies or missing reporting from some few big companies.

3.5 Data compilation

The enterprises' responses are weighted according to the average number of full-time employees. Within each stratum answers are distributed into percentages answering *decline*, *unchanged* and *increase* adding up to 100 pct. The group of non-responding enterprises within the stratum is assigned same percentage distribution as the group of responding enterprises (which is considered a imputing method).

Hereafter, the responses are enumerated to the number of full-time employees of the total population, within each industry-grouping.

Confidence indicator for a variable is calculated and denominated *balance*. Is is the difference between percentages of enterprises (weighted by number of employees) that have answered *increase* and *decrease*. The balance figures do not measure the size of the increase or decrease, but only indicates that an overweight of enterprises expect either increase or decrease.

The *Composite confidence indicator* is the arithmetic average of balance figures for expected employment and current level of order books.

Especially regarding the questions on Production limiting factors, e.g. lack of workforce, the indicators reflects the share of companies that have ticked of the specific questions. The share of companies is weighted according to the average number of full-time employees within the specific companies. Hereafter the result is enumerated to cover the full population within each industry grouping.

3.6 Adjustment

No adjustments are carried out, besides seasonal adjustment.

4 Relevance

Users of the statistics are trade organizations, banks, politicians, public authorities, international organizations, business enterprises and the news media. The confidence indicators provides valuable information about the state of the business economy and are reflected upon every month in financial related news medias. There has been no survey if the statistics meets the needs of clients.

4.1 User Needs

The statistics is considered a supplement to other short-term statistics relating to this area. Users of the statistics are trade organizations, banks, politicians, public authorities, international organizations, business enterprises and the news media.

4.2 User Satisfaction

There are no measurements of user satisfaction.

4.3 Data completeness rate

The Business Surveys are conducted in partnership with the EU commission, Directorate Generale Economic and Financial affairs (DG ECFIN) and follows as far as possible the guidelines provided by them.

As a matter of confidentiality some line of business has been aggregated in larger groups.

5 Accuracy and reliability

Regarding *Accuracy*, sampling error is estimated to plus/minus 1-2 percentage points for the confidence indicators. The figures are by definition *reliable*, since they are not revised.

5.1 Overall accuracy

The statistics covers a substantial part of enterprises in the selected industries and is considered as statistically representative. In general, sampling error uncertainty at plus/minus 1-2 percentage point is expected for the indicators. Non-sampling errors are caused by non-response errors (about 21 pct. non-responses), and especially missing responses from large companies may cause fluctuations from month to month. Also measurement errors influence the statistics. A senior person in the company is asked to check mark his perception of the developments over the past three months and his expectations for the next three months. The expectations are inherently uncertain. The perception of the development over the past may also be associated uncertainty, depending on the respondent's current level of information.

5.2 Sampling error

The survey variables are mostly categorical of the type *increase*, *unchanged* or *decrease*. For each month' statistics there is calculated confidence interval with upper and lower values for the three variables constituting the Composite Confidence Indicator. The confidence interval varies from month to month, and depends on the actual number of responses in each answer category.

5.3 Non-sampling error

Basically the statistics is assumed to cover the target population satisfactory.

There is no systematically checking for errors.

By sample update, new enterprises may inform they are not registered in correct business sector and therefore not relevant.

Between lines of businesses there may be some over-coverage because of wrong or changed registration.

The tendency surveys are subjects to measurement errors: A senior person in the company is asked to check mark his perception of the developments over the past three months and his expectations for the next three months. The expectations are inherently uncertain. The perception of the development over the past may also be associated uncertainty, depending on the respondent's current level of information.

5.4 Quality management

Statistics Denmark follows the recommendations on organisation and management of quality given in the Code of Practice for European Statistics (CoP) and the implementation guidelines given in the Quality Assurance Framework of the European Statistical System (QAF). A Working Group on Quality and a central quality assurance function have been established to continuously carry through control of products and processes.

5.5 Quality assurance

Statistics Denmark follows the principles in the Code of Practice for European Statistics (CoP) and uses the Quality Assurance Framework of the European Statistical System (QAF) for the implementation of the principles. This involves continuous decentralized and central control of products and processes based on documentation following international standards. The central quality assurance function reports to the Working Group on Quality. Reports include suggestions for improvement that are assessed, decided and subsequently implemented.

5.6 Quality assessment

The statistics covers a substantial part of enterprises in the selected industries and is considered as statistically representative. In general, sampling error uncertainty at plus/minus 1-2 percentage point is expected for the indicators. Non-sampling errors are caused by non-response errors (about 21 pct. non-responses), and especially missing responses from large companies may cause fluctuations from month to month. Also measurement errors influence the statistics. A senior person in the company is asked to check mark his perception of the developments over the past three months and his expectations for the next three months. The expectations are inherently uncertain. The perception of the development over the past may also be associated uncertainty, depending on the respondent's current level of information.

5.7 Data revision - policy

Statistics Denmark revises published figures in accordance with the [Revision Policy for Statistics Denmark](). The common procedures and principles of the Revision Policy are for some statistics supplemented by a specific revision practice.

5.8 Data revision practice

Provisional and final figures are not produced. For some variables, *employment, sales* and *prices*, the enterprises are, however, asked to assess their expectations of trends over the next three months and at a later time the actual trends over the same period. There may be comparatively great differences in the enterprises' assessment of these two periods, particularly around the turning points in the economic trends.

6 Timeliness and punctuality

The Survey is launched about 5 working days before the beginning of the survey month. Questionnaires or e-mail notification is send out. Deadline for responses is about the 6th of the survey month. Reminder is send about the 13th giving new deadline about the 20th of the survey month. The statistics is compiled about the 24th immediately before deadline for sending data to EU-partner DG ECFIN. Last but one working day before the end of the survey month data is published in both Denmark and EU. The process always runs punctual.

6.1 Timeliness and time lag - final results

The statistic is published the last day but one of the survey month as a principal rule, i.e. about 30 days after the date of reference. Data is not revised afterwards.

6.2 Punctuality

The process always runs punctual with no delays.

7 Comparability

The Construction Sector survey has been conducted since 1970 by Statistics Denmark.

The survey is conducted in partnership with DG ECFIN and historical data is to be found at their [homepage](#).

7.1 Comparability - geographical

The statistics is carried out in collaboration with the EU-commission, and the same survey is carried out in other EU-countries. Please refer to [DG ECFIN](#).

7.2 Comparability over time

The first tendency survey was conducted for the 1st quarter of 1970. Until the 3rd quarter of 1974, the questions concerned completed construction projects, volume of orders and employment analyzed by new buildings, including extensions, repair and maintenance and civil engineering. Questions concerning the shortage of manpower analyzed by skilled and unskilled manual workers were also included in the survey. From the 4th quarter questions concerning completed construction projects were excluded and the questions concerning manpower were also changed. This implied that questions concerning shortage of manpower were divided into construction and civil engineering only. The composite short-term indicator was published for the first time in conjunction with the tendency survey conducted for the 1st quarter of 1984. The composite short-term indicator was seasonally adjusted for the first time for the 4th quarter of 1996. As of the 3rd quarter of 1985 carpenters and joiners were classified to the same group. As of 1st quarter of 1987 questions concerning volume of orders were divided into construction and civil engineering. Furthermore, the question concerning building activity limitations was also extended. As of January 2006 the survey was expanded to contain all private enterprises within the construction industry whose activities are classified to F of Nace rev. 1., so that the survey at present contains all classified to F of Nace rev. 2. As of January 1998 the Danish tendency survey was harmonized with the tendency surveys conducted in the other EU member states. This implies that the tendency survey is now conducted monthly. Furthermore, new questions have been added to the tendency survey concerning enterprises' sales and prices. Also a division of all questions relating to residential buildings, other buildings, total construction, civil engineering and total building and construction projects was introduced, however terminated by the end of 2010. The statistics are generally comparable over time, except were questions have been changed. As of October 2012, the number of strata has changed from seven to three (1-9, 10-49 and> 50 employees) and the account base has shifted from the register: "Number of Persons Employed in the Construction Industry" to the "Business Register" (ESR) employment data, which is based on "E-income" data. These changes are not to affecting the results significantly compared to the previous time series.

As of March 2013 the order of answer options to the question about production limitations is changed. Now the answer "no limitation" is the last option to check instead of the first, as it was before. This may have led to lower percentages of "no limitation" and higher percentages of "insufficient demand" the following few month.

As of July 2013 the composite short-term indicator is no longer seasonally adjusted directly but indirectly. This implies that the two under lying indicators, employment expectations and stock of orders, are each seasonally adjusted before the averaging into the composite.

As of August 2014 some phrasings in the questionnaire have been revised in order to harmonize fully to the guidelines of DG ECFIN. Previous, questions of this type: "Regarding Building activity, how was the development the last 3 month (e.g. May-July) as compared to the previous 3 month (e.g. February-April)? please tick either *less*; *unchanged* or *bigger*". Now there are no comparison between two 3-month periods, and instead is asked: "How has your building activity developed *over* the past 3 month? please tick either *decreased*, *unchanged* or *increased*" The results are believed to be the same, and no data break has been detected. The same change has been made for questions concerning the future development over the next 3 month.

Furthermore the answer possibilities regarding *Overall order book* has been changed from *less than normal*; *normal* or *larger than normal* to *not sufficient; *sufficient* or *more than sufficient*. This is supposed to have led to break in data.

7.3 Coherence - cross domain

Data from the tendency survey for the construction industry supplement the other short-term statistics relating to this area. Furthermore, Statistics Denmark conducts the tendency survey in collaboration with the EU Commission. Similar surveys are conducted by the other EU member states. This implies that current conditions in Denmark are compared to conditions in other EU member states.

7.4 Coherence - internal

The data set of the survey is consistent.

8 Accessibility and clarity

Results of the business tendency surveys are published monthly at Statistics Denmark; Key indicators are published in the newsletter edition Nyt fra Danmarks Statistik, Konjunkturbarometer for Serviceerhverv and in English at the homepage Short term trends. Detailed data is available in English version at http://www.statbank.dk; choose English language and look for the tables KBB11-KBB66.

Read here about the statistics.

Also, data are published at the homepage of the EU-commission partner Directorate Generale Economic and Financial affairs (DG ECFIN) along with similar data from other EU countries.

Scientists and analysts have the option to buy detailed micro-data through the Division of Research Services, Statistics Denmark. In this case data will anonymized in order to ensure enterprises confidentiality.

8.1 Release calendar

The publication date appears in the release calendar. The date is confirmed in the weeks before.

8.2 Release calendar access

The Release Calender can be accessed on our English website: Release Calender.

8.3 User access

Statistics are always published at 8:00 a.m. at the day announced in the release calendar. No one outside of Statistics Denmark can access the statistics before they are published.

8.4 News release

These statistics are published in a Danish press release. Also a brief message occurs on Twitter.

8.5 Publications

Based on the confidence indicators the dynamic graphical presentation [Business Cycle Tracer](#) (konjunkturcyklus) is updated. As the title indicates the graph traces the development in the business cycle, whether it is in a upswing or downswing phase.

8.6 On-line database

The statistics are published in the StatBank in the following tables:

- [KBYG11](#): Trends in Construction by industry (DB07), indicator, assessment, progress and time
- [KBYG22](#): Orderbook-levels in Construction by industry (DB07), assessment and time
- [KBYG33](#): Production limitations in Construction by industry (DB07), type and time
- [KBYG44](#): Confidence indicator for Construction by indicator, seasonal adjustment and time
- [KBYG66](#): Duration of work, in number of months, ensured by current order-book by industry (DB07) and time

Construction industry, adjusted for seasonality and break

- [KBYG11K](#): Trends in Construction, balances (seasonally adjusted) by industry (DB07), indicator, seasonal adjustment, progress and time
- [KBYG22K](#): Orderbook-levels in Construction, balances (seasonally- and break adjusted) by industry (DB07), indicator, seasonal adjustment and time
- [KBYG44K](#): Confidence indicator for Construction (break adjusted) by indicator, seasonal adjustment and time

8.7 Micro-data access

Scientists and analysts have the option to buy detailed micro-data through the [Division of Research Services](#), Statistics Denmark. In this case data will anonymized in order to ensure enterprises confidentiality.

8.8 Other

Also, data are published at the homepage of the EU-commission partner [Directorate Generale Economic and Financial affairs (DG ECFIN)](#) along with similar data from other EU countries.

8.9 Confidentiality - policy

The statistics is subject to the confidentiality policy of Statistics Denmark, in Danish [here](#).

8.10 Confidentiality - data treatment

Data is aggregated into wider industry groupings if necessary to ensure confidentiality especially for large enterprises. Furthermore, response rates within individual industry groupings are not public available.

8.11 Documentation on methodology

Please refer to the EU-commission partner DG ECFIN's homepage on methodological guides

In the database TIMES4 is entered descriptions on the variables of the statistics. A special economic confidence indicator based on the tendency surveys on Industry, Construction, Retail Trade and Services along with Consumer survey, is calculated for the newsletter publications. Method document, in Danish, is available here: Tillidsindikator - metodebeskrivelse og analyse.

8.12 Quality documentation

Results from the quality evaluation of products and selected processes are available in detail for each statistics and in summary reports for the Working Group on Quality.

9 Contact

The administrative placement of this statistic is in the division of Short Term Statistics. The person responsible is Erik Slentø, tel. +45 3917 3088, e-mail: esl@dst.dk

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