

KOF Konjunkturforschungsstelle

KOF Manufacturing Survey Metainformation

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Editor	KOF Konjunkturforschungsstelle der ETH Zürich KOF Centre de recherches conjoncturelles de l'EPF de Zurich		
Director	Prof. Dr. Jan-Egbert Sturm		
Business Tendency Survey	Dr. Klaus Abberger, Andreas Dibiasi, Anne Kathrin Funk, Pauliina Sandqvist		
IT Support	Dr. Matthias Bannert, Charles Clavadetscher, Stefan Meichtry		
Administration	Barbara Frank, Nadia Genova		
Layout	Vera Degonda, Nicole Koch		
Address	LEE F 101, Leonhardstrasse 21, 8092 Zürich		
Phone	+41 44 632 43 26	E-Mail	kof@kof.ethz.ch
Fax	+41 44 632 13 52	Homepage	http://www.kof.ethz.ch

History of KOF Business tendency surveys

Before, during and after the Second World War, the business situation of Swiss companies was rather unstable due to their dependence on foreign business partners. It was difficult to obtain swift information on current economic and political developments. In 1937, companies in trade and industry therefore set up a group to promote the exchange of information. A complementary economic research institute (today's KOF Swiss Economic Institute) was established a year later.

1955 saw the introduction of written standardised questionnaires, which were given out before meetings to survey the attending companies in regard of their business situation. The surveys were modelled on the predominantly qualitative surveys conducted by INSEE in Paris and Ifo Institute in Munich. This was the beginning of the monthly and quarterly self-administered KOF Business Tendency Surveys with written questionnaires.

The early range of sectors - industry, retail and wholesale - was again expanded from 1988 on. Initially, the focus was on the accommodation and food service activities and the construction industry, two particularly cyclical sectors. The expansion was completed in 2006 with the introduction of private sector service industries that had previously not been covered. From 1999 onwards, the KOF Business Tendency Surveys were successively adapted to EU survey standards.

Concept of qualitative business tendency surveys

In contrast to the common official statistics, which are based on quantitative data with delayed availability, the business tendency surveys contain qualitative questions and data are quickly available. The questions on the historical development of key business parameters such as incoming orders, production, inventories, prices and employment, can be answered with the help of categories (e.g. higher, same, lower). Hence, there is no need to wait for accounting, statistical or inventory data. In addition, the businesses are asked about the future development of certain business activity parameters (e.g. expected incoming orders: will go up, will remain unchanged, will go down) and for assessments of the current situation (e.g. finished goods inventory: too high, normal, too low).

Milestones in the development of the manufacturing survey

Self-administered monthly surveys on tendencies in incoming orders, order books, inventories and production have been conducted among manufacturing companies since 1955, written quarterly surveys on staff numbers since 1958.

With the aim of raising the significance of the results, the answers regarding staff numbers at the participating companies have been weighted since 1959. The range of questions was extended in 1967. Aside from the monthly questionnaire, a new quarterly questionnaire was introduced which, for the first time, contained a quantitative question (on technical capacity utilisation).

In 1971, a French version of the survey was prepared. Thanks to the associated regionalisation process, participation numbers expanded significantly in the 2nd half of the 1970s. Three export categories were included in the analysis in 1979 (0-33%, 34-66% and 67-100%), and the first category was broken down further in 1999 (0-4% and 5-33%).

The survey has been conducted in all three official languages since 1983.

Since 1989, analysis at the sector level has been broken down into three size categories to give more weight to the analysis of small and medium-sized enterprises.

The voluntary online survey was introduced in 2000.

General Information on the Manufacturing Survey

Currently, the survey consists of a monthly questionnaire with additional quarterly questions. Quarterly questions are included in the survey in the first month of each quarter. The questionnaire is available at the surveys KOF website (KOF Surveys). Interviews with respondents show that on average the questionnaire can be completed in approximately 10 - 15 minutes.

At the moment, the firm panel of the KOF Manufacturing Survey comprises about 1250 firms that participate on a monthly basis. Among those, we find about 160 large firms (more than 250 employees), about 410 medium-sized firms (more than 50, but less than 250 employees) and about 700 small firms (less than 50 employees).

Description of aggregation procedure

For results at NOGA 2-digit level and below the responses are weighted by firm size measured through number of employed (full time equivalents). At an adapted medium coarse SNA/ISIC-Aggregat A *38 level in addition to firm size weighting, population information is used for aggregation. In a first step firms are separated in three size classes (small, medium, large) and size weighted results for each size class are calculated. The three size class results are aggregated to medium coarse level by use of the respective share of employed in the population. The medium coarse levels are aggregated to manufacturing with value added shares.

Response rates and non-response

During the last complete survey wave, i.e. in August 2018, the response rate amounts to 67.8%. The average response rate during the last 12 months, i.e. from July 2017 to August 2018, was 62%. In order to reduce non-response, KOF Swiss Economic Institute reminds missing respondents by telephone. In order to mitigate the effect of non-response on the results, we carry forward missing observations for period. That is, we replace the missing value with the response of the previous survey.

Survey mode and field period

Since 2001, the respondents can chose to participate online or to fill out a paper questionnaire. Currently, 56% of all sample firms participate online, 44% of all participants answer via paper-questionnaire. The field period starts in the first week of the reporting month and ends in the last week of the month.

Quantification, seasonal adjustment, MCD and standard errors

We quantify survey questions with a categorical response scales using the balances method. That is, we calculate the net balance that is defined as the percentage share of (+) responses minus the percentage share of (-) responses.

Certain sectors display seasonal patterns in their answers. In order to correct for seasonal movements in the aggregated series, we seasonal adjusted and smoothed results using the CENSUS-X13ARIMA-SEATS procedure.

In order to validate the quality of our aggregate series we compute the MCD (Months of Cyclical Dominance) for monthly and the QCD (QUarters of Cyclical Dominance) for quarterly questions. We report these measures in Table 1 and Table 2.

While MCD and QCD indicate the average signal in our time series, they do not say anything about the precision of these estimates. In order to provide a general idea of the precision of our estimated time series, KOF computes standard errors (s.e.) and the interquartile range (IQR) for the main statistic of all series. Generally, analytical formulas for the standard errors and the interquartile range around these statistics might not be available or might be hopelessly difficult to evaluate. Fortunately, bootstrapping is a very general method for estimating s.e. and IQR. Furthermore, bootstrapping does not require any assumptions about how our data are distributed. Finally, we know that standard errors of any sample statistic is the standard deviation of the sampling distribution for that statistic. Hence, we bootstrap (500 iterations) the distribution for the main

statistics of all questions and use it to calculate the standard errors and the interquartile range for each statistic. Due to the high computational burden, we bootstrap standard errors and IQR only once a year. Table 1 and Table 2 reports the average standard error of each survey question over the last ten years. Currently, we display average values from July 2017 to August 2018.

Description	Frequency	MCD	s.e.	IQR
Incoming orders vs. previous month	monthly	5	5.23	7.04
Incoming orders vs. previous year	monthly	3	5.55	7.40
Stock of orders vs. previous month	monthly	3	4.80	6.36
Stock of orders assessment	monthly	1	4.20	5.47
Stock of orders (foreign) assessment	monthly	2	4.98	6.55
Production vs. previous month	monthly	3	5.00	6.65
Production vs. previous year	monthly	3	5.47	7.30
Inventories intermediate Goods vs. previous month	monthly	5	5.01	6.66
Inventories intermediate Goods assessment	monthly	3	3.38	4.36
Inventories finished Goods vs. previous month	monthly	6	5.07	6.77
Inventories finished Goods assessment	monthly	3	3.25	4.26
Assessment Number of Employees	monthly	2	2.22	2.96
Assessment Business Situation	monthly	2	4.16	5.51
Expected Incoming Orders (next 3 months)	monthly	2	4.00	5.31
Expected Production (next 3 months)	monthly	3	4.07	5.39
Expected Intermediate Goods (next 3 months)	monthly	3	4.15	5.52
Expected Employment (next 3 months)	monthly	2	3.15	4.14

Table 1: MCD (Months of Cyclical Dominance)

Notes: This table displays various statistics for each monthly survey question of the KOF Manufacturing Survey. MCD shows the months of cyclical dominance (MCD). In order to calculate the MCD, we confine the data sample to the last ten years, i.e. from August 2008 to August 2018. s.e. reports the average standard error of each survey question over the last ten years. IQR shows the interquartile range (IQR) of the sampling distribution for each statistic. We obtain both, standard errors as well as IQR using bootstrap methods (500 iterations). Due to the high computational burden, we bootstrap standard errors and IQR only once a year. Currently, we display average values from August 2008 to August 2018.

Description	Frequency	QCD	s.e.	IQR
Change tech. capacities vs. previous quarter	quarterly	1	2.66	3.48
Assessment tech. capacities	quarterly	1	2.76	3.64
Capacity Utilization in %	quarterly	1	0.91	1.17
Change Selling Price vs. previous quarter	quarterly	1	3.66	4.96
Change Profit Situation vs. previous quarter	quarterly	1	3.68	4.96
Range of Production (in months)	quarterly	1	0.56	0.77
Change Competitiveness (domestically) (last 3 months)	quarterly	1	2.43	3.33
Change Competitiveness (EU) (last 3 months)	quarterly	1	3.69	4.90
Change Competitiveness (not EU) (last 3 months)	quarterly	1	3.64	4.88
Restrictions: Demand	quarterly	1	3.35	4.48
Restrictions: Labour Supply	quarterly	1	1.26	1.70
Restrictions: Tech. Capacities	quarterly	1	1.80	2.43
Restrictions: Financial	quarterly	1	1.15	1.56
Restrictions: Other	quarterly	1	2.47	3.38
No Restrictions	quarterly	1	3.77	5.11
Expected Exports (next 3 months)	quarterly	1	4.42	5.85
Expected Purchasing Price (next 3 months)	quarterly	1	3.27	4.34
Expected Selling Price (next 3 months)	quarterly	2	3.36	4.43
Expected Business Situation (next 6 months)	quarterly	1	3.42	4.52

Table 2: QCD (Quarters of Cyclical Dominance)

Notes: This table displays the quarters of cyclical dominance (QCD) for each quarterly survey question of the KOF Manufacturing Survey. We confine the data sample to the last ten years, i.e. from August 2008 to August 2018. s.e. reports the average standard error of each survey question over the last ten years. IQR shows the interquartile range (IQR) of the sampling distribution for each statistic. We obtain both, standard errors as well as IQR using bootstrap methods (500 iterations). Due to the high computational burden, we bootstrap standard errors and IQR only once a year. Currently, we display average values from August 2008 to August 2018.

International comparability and publication

The survey contains most of the questions contained in the harmonized survey program of the Directorate General for Economic and Financial Affairs of the European Commission. The harmonized program is implemented in almost all member and candidate countries of the European Union and forms an important international standard.

The results of the KOF Business Tendency Surveys are used to construct indicators which are published regularly. The main indicator for the Swiss business cycle is the KOF Economic Barometer. There is a fixed calendar for the publication of the indicator. This calendar is available at the KOF website. Media agencies can get the media release with an embargo 10 minutes before its publication. Other indicators grounding on the surveys include the KOF Employment Indicator and the KOF Business Situation, which is published in the KOF Bulletin. Detailed results of the surveys are presented on quarterly press conferences.

KOF

ETH Zürich
KOF Konjunkturforschungsstelle
LEE F 101
Leonhardstrasse 21
8092 Zürich

Telefon +41 44 632 43 26
Fax +41 44 632 13 52
www.kof.ethz.ch
kof@kof.ethz.ch