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Beyond the Business Climate: Regular and Supplementary Questions in the ifo Business Survey

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Beyond the Business Climate: Regular and Supplementary Questions in the ifo Business Survey

Abstract

In the monthly ifo Business Survey around 9,000 German companies answer questions about their current business situation, expectations and plans for the near future as well as on other business variables. This paper provides an overview of all regular questions (monthly, quarterly, biannually, annually). Furthermore, a special focus lies on detailed information about all supplementary questions since 2009. This overview can be used as a guide for future research projects. The ifo Institute provides the data via two channels: On one side, researchers can work with the firm-level microdata of all survey questions at the LMU-ifo Economics & Business Data Center (EBDC). On the other side, data sets of aggregated time-series for all regularly surveyed variables can be obtained from the ifo Center for Macroeconomics and Surveys.

JEL-Codes: C430, C800, C810, C830.

Keywords: Business Survey, survey methodology, business climate, business cycle, microdata, questionnaire, time series, forecasting.

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1 Introduction

Since 1949, the ifo Institute has been conducting the monthly ifo Business Survey by asking companies about various relevant variables regarding their economic activity. The survey was initially introduced with the pragmatic aim of closing severe gaps in official statistics in the post-war period and reducing uncertainty about economic developments by providing additional information. The great potential for economic research and business cycle analysis quickly became clear and the ifo Business Survey soon became one of the key cornerstones of the ifo Institute (Anderson 1952; Langelütke and Marquardt, 1951).

Initially, scientific analyses of the survey results were largely limited to the ifo Institute it-self. For example, Anderson and Strigel (1960) showed that with survey data unexpected changes in demand lead to changes in firms' production and pricing plans. Since the 1970s, however, researchers, forecasters, and other users of economic information increasingly recognized that the importance of the results goes far beyond a mere statistical substitute. Company-specific plans and expectations as well as assessments of the current situation have become of central importance in economic theory. The ifo Business Survey, today as in the past, mainly contains qualitative questions. The obtained data proved to be very valuable for empirical economic research and business cycle analysis.

The most important application of the ifo Business Survey results is the analysis and forecast of economic developments both on the country level as well as at the sector or branch as well as the regional level. Especially the monthly collected assessments of the current Business Situation and the Business Expectations for the next six months have proven to be extremely relevant factors. The ifo Business Climate Germany, which is calculated as a geometric mean of these two components, is one of the most important leading economic indicators in Germany (Abberger and Wohlrabe, 2006; Lehmann, 2020). In addition, numerous other indicators are calculated and published from the data material of the ifo Business Survey. Among them, for instance, are overall indicators on employment plans (ifo Employment Barometer), export expectations or uncertainty in the German economy. In addition to the evaluation of the aggregated results, the disaggregated microdata is an enormous data treasure for all kind of analyses (Becker and Wohlrabe, 2008). The importance of empirical research based on microdata has strongly increased over the past decades (Seiler and Wohlrabe, 2013). The advantages of the micro data sets most worthy pointing out are the high number of about 9,000 monthly responses from a set of firms that are representative for the German economy, the extensive set of questions answered by every firm, and the large number of observations by firm (on average, firms are observed more than 70 times) as response rates are uncommonly high and attrition is low compared to other business surveys (Link, 2020). Furthermore,

¹ Starting year of Business Surveys by sector: Manufacturing 1949, Retailing 1950, Wholesale Trade 1951, Construction 1956, Service Sector 2001

in the last years the potential of the survey for analyses on other current important economic topics has expanded by including supplementary questions in the questionnaire. Supplementary questions are surveyed irregularly or only once. Their focus usually is on current economic topics or firm-specific information of interest for research projects.

Researchers can access the company level-microdata from the ifo surveys at the LMU-ifo Economics & Business Data Center (EBDC). This provision of data is intended to increase synergies between empirical and theoretical research. The EBDC provides external databases in combination with innovative datasets on German firms. These company panels include both survey data of the ifo Institute as well as external accounting data or other structural enterprise information concerning corporate finance, investment activity or corporate governance.²

The scope of this paper is to give a detailed overview of all survey questions. In particular, we want to emphasize the enormous possibilities of using the data of the ifo Business Survey for researchers. We outline all regularly surveyed questions (as of 2021) and put a special focus on all supplementary questions from 2009 until December 2021. The paper proceeds as follows: Section 2 starts with the concept and methodology of the ifo questionnaire followed by an overview of all regularly surveyed questions in the manufacturing sector, the service sector, trade sector, and construction. Furthermore, a selection of possible applications of the resulting data for research projects, business cycle analysis, and forecasting. Section 3 focusses on supplementary questions. Section 4 outlines the access to the micro data and time series. Finally, we conclude and provide a brief outlook on possible further developments of the ifo Business Survey.

² Start year for microdata availability by sector: Manufacturing 1980, Trade 1990, Construction 1991, Service Sector 2004.

2 The standard questionnaire of the ifo Business Survey

The ifo surveys focus on collecting company-specific developments, plans, and expectations rather than asking about the companies' assessments on the whole economy or on their industry. The decision to conduct surveys by qualitative questions was made, on the one hand, because many variables, such as the assessment of incoming orders or stocks, can be surveyed better by predefining response categories (Anderson, 1952). On the other hand, it also resulted in simpler and more time-saving answers for the survey participants. Even after seven decades, this basic concept has not been changed. Qualitative information on developments in the past, on the current situation as well as plans and expectations for the future remain fundamental. It was only in later years that quantitative questions were added in some surveys.

In the ifo Business Survey, there are both qualitative (e.g. business situation) and quantitative questions (e.g. capacity utilization). Sentiments, trends and expectations are mainly condensed based on qualitative responses using the balance methodology. There are also questions with different time horizons, from developments in the past to the current situation and expectations for the near future. Because in addition to providing timely information on the current market situation, another objective is to use the survey results to gain an idea of developments in the near future. Other information, such as the extent of capacity utilization or the return on sales, requires quantitative data in order to make precise assessments. For this reason, some quantitative methods have been added to the questionnaire. These are also used in various supplementary questions or special surveys on current issues.

The data collection in the ifo Business Survey is done by sending out online and paper questionnaires. Currently around 70% of all companies participate via the online questionnaire. The online questionnaire has many advantages like unrestricted space limits for supplementary questions, faster data transmission, more comprehensive provision of results, or the possibility of including plausibility routines in the questions. That is why the ifo Institute seeks to further expand the share of online participants and is even evaluating new digital data collection methods like a survey app for mobile devices for the future. Nevertheless, there is still a not neglectable share of companies that still prefer to fill out the questionnaire in paper form.

2.1 Overview

The standard questions are divided in monthly surveyed questions and questions that are asked quarterly or only twice or once per year. Table 1 shows the number of standard questions for each survey area.

Table 1: Number of standard questions per survey area

	Manufacturing	Service Sector	Trade Sector	Construction
Monthly questions	18	15	13	31
Quarterly questions	22	18	18	5
Bi-annually questions	8	5	5	0
Annually questions	15	10	11	8

Notes: The monthly questions comprise also the Visual Analogue Scale on the Current Situation, Expectations, and Uncertainty which are only surveyed online in all sectors (see Table 2).

Additionally, there are a few monthly variables that are not surveyed directly but calculated from other questions. Namely these are the Business Climate that is a mean of the Business Situation and the Business Expectations and Productivity Expectations and Labour Hoarding variables that are composed from Workforce Expectations and Production Expectations.

Tables 2, 3, and 4 provide an overview of all standard questions and the corresponding starting dates of the time series for Germany. Some time series for Western Germany on the sector level exist even before 1990 (for an overview see Sommer and Wohlrabe 2016 and Sauer 2020). Micro data for these variables is accessible from 1980 onwards at the LMU-ifo Economics & Business Data Center.³

In Appendix A we show the original questionnaires for manufacturing, service, trade, and construction as of the year 2020.⁴ In Appendix B we provide the corresponding English translations. Questions being asked in all survey areas simultaneously are harmonized wherever it was possible.⁵

³ We provide more information on the data access in Section 4.

⁴ These are in the design of the paper questionnaire. The online questionnaire has the same questions with a different design and additional questions using a visual analogue scale.

⁵ The harmonization took place over the last years. At the EBDC, the original questionnaires for every month are available.

Table 2: Available regular monthly time series from the ifo Business Survey

	Manufacturing	Service Sector	Trade Sector	Construction
Business climate ¹	since 01/1991	since 01/2005	since 01/1991	since 01/1991
Current Business Situation	since 01/1991	since 01/2005	since 01/1991	since 01/1991
Business Expectations	since 01/1991	since 01/2005	since 01/1991	since 01/1991
Business Development	-	since 01/2005	-	-
Order Backlog (overall)	since 01/1991	since 01/2005	_	since 01/1991
Order Backlog (exports)	since 01/1991	5111CE 01/2005	_	- Since 01/1991
Order Backlog Development	since 01/1991	since 01/2005	_	since 01/1991
Order Backlog in months	- 311100 01/1331	5111CE 01/2005	_	since 01/1991
Demand Development	since 01/1991	_	_	- Since 01/1991
Demand Development	Since 01/1331	_	_	_
Export Expectations	since 01/1991	-	-	-
Production Development	since 01/1991	_	-	_
Production Expectations	since 01/1991	-	-	_
	, , , , , , , , , , , , , , , , , , , ,			
Sales Development	-	since 01/2005	since 01/1991	-
Sales Expectations	-	since 01/2005	-	-
Construction Activity	-	-	-	since 01/1991
Construction Expectations	-	-	-	since 01/1991
Prices Development	since 01/1991	since 07/2018	since 01/1991	since 01/1991
Prices Expectations	since 01/1991	since 01/2005	since 01/1991	since 01/1991
Price Coverage	-	-	-	since 01/1991
-	. 07/2010	. 01/0005	. 07/0040	. 07/2010
Workforce Development	since 07/2018	since 01/2005	since 07/2018	since 07/2018
Workforce Expectations	since 01/1991	since 01/2005	since 03/1997	since 01/1991
Inventories	since 01/1991	-	since 01/1991	-
Order Plans	-	-	since 01/1991	-
Business Uncertainty	since 04/2019	since 04/2019	since 04/2019	since 04/2019
Productivity Expectations ²	since 01/1991	since 01/2005	since 03/1997	since 01/1991
Labour Hoarding ²	since 01/1991	since 01/2005	since 03/1997	since 01/1991
Business Situation VAS ³	since 08/2005	since 01/2017	since 01/2017	since 01/2017
Business Expectations VAS ³	since 08/2005	since 01/2017	since 01/2017	since 01/2017
Uncertainty VAS ³	since 07/2017	since 07/2017	since 07/2017	since 07/2017
Notos: 1) Rusinoss climato is not di	-	•	-	· ·

Notes: 1) Business climate is not directly asked but calculated as a mean of business situation and expectations (Sauer and Wohlrabe, 2018). 2) Productivity expectations and Labour Hoarding are not directly asked but calculated from workforce expectations and business expectations. 3) VAS is a Visual Analogue Scale from 1 to 100 (Stangl, 2008). These questions are only surveyed online.

Table 3: Available quarterly time series for from the ifo Business Survey

	Manufacturing	Service Sector	Trade Sector	Construction
Capacity Utilization	since 01/1991	since 04/2011	-	since 01/1991 ¹
Technical Capacity	since 01/1991	-	-	-
Business Constraints	since 01/1991	since 01/2005	since 04/2006	since 01/1991¹
Too few Orders/Demand	since 01/1991	since 01/2005	since 04/2006	since 01/1996¹
Order Cancellations	-	-	-	since 01/2012 ¹
General Lack of Workforce ²	since 07/2018	since 07/2018	since 07/2018	since 01/1991 ¹
Lack of Skilled Workers	since 01/1991	since 01/2005	since 04/2006	since 07/2018 ¹
Lack of Low-Skilled Workers	since 01/2021	since 01/2021	since 01/2021	since 01/2021 ¹
Financial Constraints	since 01/1991	since 01/2005	since 04/2006	since 01/1991¹
Lack of Raw/Input Materials	since 01/1991	-	-	-
Insufficient Technical Capacity	since 01/1991	since 01/2005	-	-
Unfavorable Weather Conditions	-	since 01/2005	since 04/2006	since 01/1996¹
Lack of Commercial Spaces	-	since 01/2005	since 04/2006	-
Insufficient Business Equipment	-	since 01/2005	since 04/2006	-
Other Factors	since 01/1991	since 01/2005	since 04/2006	since 01/1991¹
Competitive Position				
on Domestic Markets	since 07/1994	-	-	-
on Foreign Markets inside the EU	since 07/1994	-	-	-
on Foreign Markets outside the EU	since 07/1994	-	-	-
Short-time Work currently	since 01/1991	since 06/2020	since 06/2020	since 06/2020
Short-time Work next 3 months	since 01/1991	since 06/2020	since 06/2020	since 06/2020
Overtime Work	since 01/1991	-	-	-
Credit Negotiations with Banks	since 01/2017	since 01/2017	since 01/2017	since 01/2017
Customer Traffic at Stores	-	-	since 07/2018 ³	-
Customer Traffic Online	-	-	since 07/2018 ³	-

Notes: 1) Monthly surveyed variables in construction. 2) Directly surveyed until the end of 2020. Now automatic variable, which is true if at least one of the variables "lack of skilled workers" and "lack of low-skilled workers" is true. 3) Only in the retailing sector, not in wholesaling.

Table 4: Annually and biannually variables in the ifo Business Survey

	Manufacturing	Service Sector	Trade Sector	Construction
Overall investment	since 05/2015	since 05/2006	since 05/2015	-
Investment in Buildings	since 05/2015	since 05/2015	since 05/2015	-
Investment in Equipment	since 05/2015	since 05/2015	since 05/2015	-
Investment in Software & Databases	since 05/2018	since 05/2018	since 05/2018	-
R&D Investment	since 11/2021	since 03/2022	since 03/2022	-
Targets of Investment Activities	since 11/2021	-	-	-
Factors for Investment Activities	since 11/2021	-	-	-
Assessment of the Profit Situation	since 06/2002	-	-	-
Development of the Profit Situation	since 06/2002	-	-	-
Surplus/Loss in %	since 09/2008	-	-	-
R&D Activity	since 12/2016	-	-	-
Share R&D Personnel/all Employees	since 12/2016	-	-	-
Share R&D Expenditures/Sales	since 12/2016	-	-	-
Special Constraints in Construction	-	-	-	since 05/1991
Share of sales online	-	-	since 02/2022	-

Notes: The questions the profit situation are surveyed twice a year. The investment questions are surveyed for the current year twice a year (March and November) and for the last year (in March) and the next year (in November) once a year. R&D activity and construction constraints are surveyed once a year.

2.2 Research using ifo business survey (micro) data

There are numerous articles that use data from the ifo Business Survey to address a wide variety of economic topics. Becker and Wohlrabe (2008) provided an overview of the data coverage as well as past and present research with the ifo Business Survey. In the following, we provide a selection of articles which used the micro data or investigated the forecast performance of the ifo Business Climate and its components.

In 2019 the ifo institute conducted a meta-survey in order to find out the factors driving the answering behavior of participating companies when answering the monthly questions. The meta-survey was conducted in all four sectors. Freuding et al. (2021) provide the corresponding results for the two main questions: assessment of the current situation and the expectations for the next six months. Above all, the earnings situation, demand and sales are particularly relevant variables for answering both questions. It can also be seen that internal factors are more important in the assessment than factors external to the company. When it comes to assessing the current situation, more than half of all companies draw a comparison with the business situation in the same month of the previous year and with their expectations

and targets for that month. Only a small proportion of companies do not make any comparisons at all. Regarding the business outlook for the next six months, all the companies surveyed think in terms of the period, i.e. the situation within the next six months.

The most important and widely known indicator from the survey is the ifo Business Climate Germany. The Business Climate is not surveyed directly, but calculated as a geometric mean of the Business Situation and the Business Expectations for the next 6 months. It gets most of the media attention and has an immediate impact on financial markets (Mittnik et al., 2013). This is also due to the forecast performance. There are a few papers with literature reviews with focus on studies for the performance of the ifo Business Climate to forecast either German GDP or industrial production (Abberger and Wohlrabe, 2006; Seiler and Wohlrabe, 2013). Lehmann (2020) adds a comprehensive literature review of the forecasting properties of all survey variables for GDP and other economic variables.

Especially three ifo indicators have proven to be very suitable to forecast German GDP: the ifo Business Climate, the ifo Business Situation and the ifo Business Expectations. Studies by Schumacher and Dreger (2002), Kholodilin and Siliverstovs (2005), and Drechsel and Scheufele (2011) demonstrate the strong forecasting ability of the ifo indicators for German GDP growth. Drechsel and Scheufele (2012) proved that the forecasting performance increased during the global financial and economic crisis 2008/2009. Henzel and Rast (2013) and Heinisch and Scheufele (2017) examined the evolution of the ifo indicators' forecasting power for different information sets during the quarter. Unlike quantitative indicators from official statistics, survey indicators do not have a significant publication lag and are not revised over time. This informational advantage should lead to a higher forecast performance of the ifo indicators in comparison to hard indicators published by the Federal Statistical Office of Germany. Both studies show that the ifo Business Climate Industry and Trade and the ifo Business Expectation Industry and Trade generate the smallest forecast errors for GDP when the forecast is calculated at the beginning of a quarter. However, after the first publication of industrial production for a specific quarter, the ifo indicators are, on average, no longer able to beat the official indicator.

One of the major and most challenging forecasting tasks is the early detection of turning points. Qualitative leading indicators can make an important contribution to detect business cycle turning points in the very short-run. Several studies find evidence that either the ifo Business Climate Industry and Trade or the ifo Business Climate Manufacturing can detect a change in the speed of cyclical growth or turning points at an early stage. A prominent representative of "turning point rules" is the established "Threefold-Rule" by Vaccara and Zarnowitz (1978). If the ifo Business Climate falls (rises) three times in a row, these movements are interpreted as lower (upper) turning points of the German economy. Hott et al. (2007) prove that the "Threefold-Rule" leads to good dating results. Abberger and Nierhaus (2014) also evaluate the "Threefold-Rule" and compare its performance with a simple Markov switching

model. For the cyclical component of German industrial production, they conclude that the ifo Business Climate detects turning points in manufacturing at an early stage.

Research with the ifo Business Survey is not limited to aggregated data (time series). Beyond that, the micro data provide unique opportunities to study firms' economic behavior and expectation formation. There is some micro data research about the expectation formation process and the effects of firms' expectations. Bachmann and Elstner (2015) combine production expectations of manufacturing firms with production changes to construct series of quantitative firm-specific expectation errors. They find that factor misallocations caused by over- or underpredictions of the upcoming production lead to welfare losses which in the worst case are comparable to conventional estimates of the welfare costs of business cycles fluctuations. Massenot and Pettinicchi (2018) find that expectation errors decreases with the size and the age of the firm as firms learn to reduce their extrapolation bias over time. Buchheim and Link (2017) show that aggregate and disaggregate information explain comparable shares of the variance in expectations. Moreover, their results suggest that firms rationally incorporate disaggregate information into their expectations.

Moreover, also other variables or combination of other variables are subject of micro data research. For example, uncertainty was subject of the research by Bachmann et al. (2013) or Bachmann et al. (2021). The credit constraints variables were analyzed among others by Fidrmuc and Hainz (2013) and Strasser (2013). Price setting behavior of firms was also subject of various research papers. Schenkelberg (2013) finds that the macroeconomic environment as well as the firm-specific condition significantly determines the timing of both actual price changes and pricing plan adjustments and that input cost changes are important determinants of price setting. Bachmann et al. (2018) estimate from the micro data of the German ifo Business Climate Survey the impact of idiosyncratic volatility on the extensive margin of firm-level price setting behavior. Link (2019) studies the price and employment response of firms to the introduction of a nation-wide minimum wage in Germany. Therefore, he combines the price setting variables with a supplementary question on the introduction of the minimum wage in Germany in the year 2015. More micro data research with supplementary questions is presented in the following sections.

3 Supplementary questions in the ifo Business Survey

In addition to the periodically asked standard questions, the ifo Business Survey can include questions on selected topics as needed. These questions may be prompted by the intention to obtain an ad hoc picture of the effects of certain developments in economic policy on the enterprises and the firms' reactions to them. The other reason is the collection of data for research projects.

Since this is a panel survey, these questions can also be linked to other variables in the survey and, thus, can be observed over a longer time period. Additionally, they can serve either as control, explanatory or dependent variables in statistical or econometric analyses. Supplementary questions cannot only provide information at the survey period, but also offer the possibility for ex-post evaluations.

3.2 Overview of the range of topics of the supplementary questions

Tables 4, 5, and 6 provide an overview of the various topics covered by the supplementary questions that have already been surveyed in the ifo Business Surveys from 2009 until the end of 2021. Furthermore, the tables show the survey date for each question and the sector in which it was asked. In the following sections, the background and exact wording of the supplementary questions as well as selected research results and publications are explained in more detail. The supplementary questions can be roughly divided into the 3 fields "current economic policy questions", "company-specific questions" and "other research questions". In addition, since the beginning of the Covid-19 crisis, there have also been numerous questions dealing with the impact of the pandemic and the reaction of the companies.

Most commonly, supplementary questions are used for the evaluation of consequences of political decisions or other important (geopolitical) events for the German economy. Table 4 shows the topics covered by such questions in the years 2009 to 2021.

Table 4: Overview of the surveyed economic policy questions

Topics	Date	Surveyed sectors
Russia Ukraine conflict	05/2014	Manufacturing sector
Introduction of the minimum wage in Germany	11/2014, 03/2016	All sectors
Refugee crisis	10/2015	All sectors
Brexit	06/2016, 12/2018	Manufacturing sector
US trade policy under President Trump	02/2017	Manufacturing sector
Negative interest rates	06/2017	All sectors
EU-Mercosur Free Trade Agreement	08/2017	Manufacturing sector
US tax reform	03/2018	Manuf., Trade, Services
Tax incentives for R&D in Germany	09/2019	Manufacturing sector
Interest in current economic policy topics	02/2020	All sectors
Supply Chain Act	05/2021	Manuf., Trade, Services

For research projects it may be important to have specific information about the responding company or personally about the respondent. This information may be matched with other variables of the Business Survey or used as control variables. Therefore, some supplementary questions dealt with variables which researchers can use as control variables or to divide the panel in different categories (e.g. family businesses vs. other businesses). Table 5 gives an overview of all company- or respondent-specific variables. Table 6 provides an overview of other questions surveyed since 2009 covering a wide topical range.

Table 5: Company- or respondent-specific questions

Topics	Date	Surveyed sectors
Export markets	06/2011	Manufacturing sector
Family Business	02/2014	All sectors
Characteristics of medium sized companies	08/2016	All sectors
Online shops and market places, share of online turnover	08/2016, 08/2019	Trade sector
Export of services, offering services abroad	04/2017, 08/2018	Service sector
Business processes executed by external service providers	08/2018	Manufacturing sector
Share of foreign turnover	09/2018	All sectors
Year of company foundation	09/2018	All sectors
Department and position of the respondent(s)	11/2018	All sectors
Importance of logistics services for the business activity	06/2019	Manufacturing, Trade
Highest educational attainment of the respondent	02/2020	All sectors
Respondents' interest in economic policy topics	02/2020, 11/2021	All sectors
Decisions regarding production and price setting	10/2020	All sectors

Table 6: Other research questions

Topics	Date	Surveyed sectors	
Innovation	01/2009	Manufacturing sector	
Main bank relations	06/2009	Manuf., Trade, Construction	
Effects of extreme weather events	02/2013, 05/2019	All sectors	
Importance of flight connections	03/2013	Trade sector	
Intended purpose of firm credits	06/2016	All sectors	
GDP expectations of companies	08/2018, 03/2019,	All sectors	
GDP expectations of companies	08/2019, 08/2020	All Sectors	
Capacity utilization	01/2019	Manuf. Services, Constr.	
Uncertainty about demand	12/2019	Manuf., Services, Trade	
Satisfaction with institutions and administration	09/2021	All sectors	

Since March 2020, the Covid-19 crisis is the overshadowing topic for the German and the World economy. For this reason, various additional questions on this topic have been included in the survey every month since then. These questions mainly focus on short and long-term effects of the pandemic on companies. They cover a wide range of topics like short-term work, remote working from home, government aid payments, or internal company problem areas during the crisis (Table 7). In subsection 3.5 the exact topics and wordings of these questions as well as the backgrounds, results, and policy implications are described in detail.⁶

Table 7: Supplementary questions on the Covid-19 crisis

Topics	Date	Surveyed sectors
Negative effects at the outbreak of the pandemic	03/2020	All sectors
Effect of the pandemic on the business situation	04/2020-12/2021	All sectors
Share of workers in short-time work	05/2020-12/2021	All sectors
Expectations of the duration of restrictions	05/2020-12/2021	All sectors
Duration until normalization of the business situation	05/2020-12/2021	All sectors
Share of workers working from home	02/2021-12/2021	All sectors
Problems for the companies in different areas	06/2020-12/2021	All sectors
Threat to the company's existence	06/2020-12/2021	All sectors
Number of employees	quarterly since 05/2020	All sectors
Measures taken by the companies	04/2020-07/2020	All sectors
Other short-term effects of the crisis	04/2020-07/2020	All sectors
Effects of the crisis in the long run	05/2020-07/2020	All sectors
Liquidity situation	05/2020-02/2021	All sectors
Governmental measures to help enterprises	04/2020-05/2020	All sectors
Supply bottlenecks	04/2020-12/2021	All sectors

⁶ Source: ifo Business Survey, translation from German by the authors. Multiple choice questions with single selection unless otherwise specified.

3.2 Current economic policy questions

3.2.1 Russia-Ukraine conflict and sanctions for Russia

In March 2014, Russia annexed the Ukrainian peninsula of Crimea. This was followed by fighting in the region and EU sanctions against Russia. In May 2014, the ifo Institute therefore asked the manufacturing companies participating in the ifo Business Survey on their trade relations with Russia and the possible impact of the crisis on their business:⁷

Question 1a: "Does your company have economic relations with Russia?"

Answers 1a: (+) yes, (-) no

Question 1b: "If yes, which ones?" (multiple selection)

Answers 1b: (1) Imports from Russia, (2) Exports to Russia, (3) Joint Ventures with Russian companies, (4) Own branch in Russia, (5) Via third-party companies

Question 2: "Has the Russian-Ukrainian conflict already lead to any constraints for your company?"

Answers 2: (+) yes, (-) no

Question 3: "Do you expect any constraints for your company in the future?"

Answers 3: (+) yes, (-) no

Results: Grimme et al. (2014) showed that the business situation of companies with Russia-relations was on average worse in 2014 than that of companies without Russian trade relations. Export expectations and production plans, on the other hand, showed no significant differences between the two groups.

3.2.2 Introduction of the minimum wage in Germany

On January 1, 2015, the nationwide minimum wage of 8.50 EUR came into force in Germany. For this purpose, all companies participating in the ifo Business Survey (in all sectors) were asked ex ante in November 2014 about measures planned because of the minimum wage and ex post in March 2016 on the actual effects:

November 2014:

Question 1a: "The nationwide minimum wage will be introduced on January 1st, 2015. Will your company be affected by that?"

Answers 1a: (+) yes, (-) no.

Question 1b: "If so, what measures do you expect to take in response to the minimum wage?" (multiple selection)

⁷ Similar supplementary questions will be added to the survey in March 2022 after the Russian invasion of the Ukraine.

Answers 1b: (1) No measures planned or necessary, (2) Staff reduction, (3) Reduction in working hours, (4) Price increases, (5) Reduced investments, (6) Reductions in special payments, (7) Other measures

March 2016:

Question 2a: "The nationwide minimum wage has been introduced on January 1st, 2015. Has your company been affected by that?"

Answers 2a: (+) yes, (-) no.

Question 2b: "If so, what measures have you taken?" (multiple selection)

Answers 2b: (1) None, (2) Staff reduction, (3) Reduction in working hours, (4) Price increases, (5) Reduced investments, (6) Reductions in special payments

Question 2c: "If so, have employments changed in your company?" (multiple selection)

Answers 2c: (1) "Mini-jobs" have been eliminated, (2) "mini-jobs" have been converted into employments subject to social security contributions, (3) new employments subject to social security contributions have been created, (4) no employments have changed

Results: The estimated employment effect, examined by Link (2019), was only modestly negative and statistically insignificant. Affected firms increased prices much more frequently. The price effect was prevalent across different sectors of the economy including manufacturing and thus not limited to low wage industries. Firms rolled over the lion's share of the costs generated by the minimum wage to their customers. There was a considerable heterogeneity in firms' responses to the minimum wage depending on their own business expectations, product market competition, and local labour market conditions.

3.2.3 Refugee crisis in 2015

At the height of the refugee crisis in 2015, there was much discussion about the integration of asylum seekers into the German labour market. For this reason, companies in all sectors of the ifo Business Survey were asked in October 2015 about the potential for hiring asylum seekers and possible obstacles:

Question 1: "How would you currently assess the potential for asylum seekers to be hired in your industry in the following positions?" (Matrix)

Answers 1 (for all items): (-) low, (+) high

- a) Trainee
- b) Low-skilled worker
- c) Skilled worker
- d) Management
- e) Other positions

Question 2: "How hindering do you consider the following factors to be for hiring asylum seekers in your industry?" (Matrix)

Answers 2 (for all items): (-) little, (+) very

a) Labor law requirements

- b) Unsuitable qualification level
- c) Minimum wage
- d) Lack of language skills

Results: The probability of hiring refugees as unskilled workers or trainees was rated highest in comparison. Language skills and bureaucratic hurdles by labour law requirements were most often seen as obstacles for hiring. For more detailed results see Battisti et al. (2015).

3.2.4 Brexit

On June 23, 2016, the UK voted in a referendum to leave the EU. The modalities of the Brexit were subsequently negotiated between the UK and the EU for more than four years. Before the referendum and during the negotiation process, the manufacturing companies participating in the ifo Business Survey were asked questions on the expected effects of the Brexit and the possible consequences of a Hard Brexit:

June 2016 (before the referendum):

Question 1: "What impact of a possible Brexit on your company would you expect?" **Answers 1**: (-) Negative, (=) none, (+) positive

December 2018:

Question 2: "In this question, you can specify either a probability or a probability interval. How likely do you think a hard Brexit is, i.e. without a comprehensive deal between the EU and the UK?"

Answers 2: (1) Probability of ____%, (2) Probability between ____ and ____%

Question 3: "What percentage of your sales would be affected by a hard Brexit?"

Answer 3: ____%

Question 4: "What impact would a hard Brexit have on this share of your sales?" **Answers 4**: (++) Very positive, (+) rather positive, (=) none, (-) rather negative, (--) very negative

Results: 40 percent of the manufacturers surveyed stated that their sales would not be affected at all by a hard Brexit. For the other companies, the impact would have been on a manageable scale, affecting just 3 percent of turnover (ifo Institute, 2018).

3.2.5 US trade policy under President Trump

In January 2017, Donald Trump was appointed the 45th president of the United States of America. With "America First," he announced a protectionist trade policy. In February 2017, therefore all manufacturing companies participating in the ifo Business Survey were asked about their trade relations with the USA and possible effects of the new policy:

Question 1: "The new US administration's trade policy is likely to become more protectionist. We expect that..." (multiple selection)

Answers 1: (1) New customs duties will be imposed, (2) existing customs duties will be increased, (3) other trade barriers (e.g. volume quotations) will be imposed (4) there will be no changes

Question 2: "What impact would this have on your operations in the U.S.?" (multiple selection)

Answers 2: (1) Our company will produce (more) in the USA, (2) (more) subsidiaries will be established in the USA, (3) we don't export to the USA

Question 3: "Sales of our company in the U.S. business are therefore expected to ..." **Answers 3**: (+) increase, (=) not change, (-) decrease

Question 4: "The USA is currently of interest to us as a ..." (Matrix)

Answers 4 (for all items): (+) very important, (=) important, (-) not important

- a) Destination of our exports
- b) Origin of our imports
- c) Location of production

Results: The results showed that companies expected customs duties and other trade barriers to increasingly become a tool of U.S. policy. The vast majority of companies nevertheless did not expect sales to decline. Finally, the U.S. is far more important as an export market and production location for German companies than as a source country for imports (Braml and Felbermayr, 2017).

3.2.6 Negative interest rates

In times of low interest rates and even negative interest rates, companies in all sectors of the ifo Business Survey were asked in June 2017 about the impact of negative interest rates and their possible responses to them:

Question 1a: "Have you been confronted with negative interest rates on deposits by at least one of your banks?"

Answers 1a: (+) yes, (-) no.

Question 1b: "If yes, what steps have you taken to avoid paying negative interest?" (multiple selection)

Answers 1b: (1) No steps – we accepted the negative interest rates, (2) Negotiating with the bank, (3) Switch to another bank that does not (yet) charge negative interest rates, (4) Increase of cash holding, (5) Reallocation to other financial assets and repayment of loans, (6) Reallocation of assets within the divisions of the company, (7) Implementation or bringing forward of (additional) investments, (8) Other: please specify

Question 1c: "If yes, the negative interest rate problem is weighing on our earnings situation:"

Answers 1c: (++) strongly, (+) rather strongly, (=) insignificantly or not at all

Question 2: "How many banks in total do you refer to as your main bank?" **Answers 2**:(1) 0, (2) 1, (3) 2, (4) 3, (5) 4, (6) more than 4

Results: If affected, most companies tried to avoid negative interest rates. The most common response was to negotiate with the bank. Hainz et al. (2017) present detailed results and policy implications of the negative interest rate topic.

3.2.7 EU-Mercosur Free Trade Agreement

The EU and Mercosur (Argentina, Brazil, Paraguay and Uruguay) were negotiating a free trade agreement for 20 years. An agreement was reached in the summer of 2019. Its ratification, however, is still pending. In August 2017, the manufacturing companies participating in the ifo Business Survey were surveyed on the potential impact of such an agreement:

Question 1: "Does your company export to the Mercosur region?" **Answers 1**: (+) yes, (-) no.

Question 2: "Our company will start exporting to the Mercosur region in the medium term or export more if..." (multiple selection)

Answers 2: (1) trade tariffs decrease, (2) transport costs (e.g. for freight or insurance) decrease, (3) technical standards and norms are harmonized, (4) bureaucratic obstacles (e.g. certificates, permits) are eliminated, (5) political risks decrease, (6) access to service markets is facilitated, (7) access to public tenders is facilitated

Question 3: "In case of the ratification of a free trade agreement between the EU and Mercosur, our company would in the medium term..." (multiple selection)

Answers 3: (1) export (more) to Mercosur, (2) import (more) from Mercosur, (3) invest (more) in Mercosur, (4) be exposed to increased competition from Mercosur companies, (5) not be affected

3.2.8 US tax reform

At the end of 2017, Donald Trump signed into law the biggest tax reform in the USA since 1986. The reform provided for significant tax cuts, but also potentially burdensome measures for foreign companies. In March 2018, all companies participating in the ifo Business Survey (except construction companies) were asked about the consequences of the tax reform for them and their reactions:

Question 1: "What percentage of your turnover is generated in the United States?" **Answer 1**: _____ %

Question 2: "How much competition does your company face from companies in the United States?"

Answers 2: (+) Strong, (=) medium, (-) less, (0) not at all

Question 3: "Due to the U.S. tax reform your company's tax burden will ..." (Matrix)

Answers 3 (for all items): (-) decrease, (=) stay the same, (+) increase

- a) In the short term
- b) In the long term

Question 4: "How will your company respond to the U.S. tax reform?" (Matrix)

Answers 4 (for all items): (-) reduce, (=) no changes, (+) increase

- a) Exports to the United States
- b) Imports from the United States
- c) Investments in the United States
- d) Investments in Germany

Question 5: "We are likely to relocate intellectual property to the United States." **Answers 5**: (+) yes, (-) no.

Results: Boumans et al. (2020) showed that many firms with substantial U.S. revenues or production capacities in the United States intended to expand U.S. investment in response to the reform, in particular large firms and manufacturing companies. The expected effects on investment in Germany were ambiguous: While some firms planned to substitute between investment locations, others planned to expand in Germany and the United States. More results are presented by Krolage and Wohlrabe (2018). They show that for companies with more than 5% turnover in the United States often expected positive effects for their companies due to the tax reform.

3.2.9 Tax incentives for R&D in Germany

In 2019, the German government decided to introduce tax incentives for companies' research and development starting in 2020. In September 2019, the manufacturing companies participating in the ifo Business Survey were therefore asked in general about their R&D activities and the possible effects of the new tax incentives:

Question 1: "What share do the following items have in your research and development expenditures?" (Matrix)

Answer 1 (for all items): _____ %

- a) Personnel
- b) Contract research by universities and research institutes
- c) Contract research by other companies

Question 2: "From which of the following institutions has your company received R&D funding in the last three years?" (multiple selection)

Answers 2: (1) EU institutions, (2) Federal Ministry of Education and Research, (3) Federal Ministry for Economic Affairs and Energy, (4) Federal state, (5) Other, (6) None

Question 3: "The German government is planning to introduce tax incentives for R&D. Is this an option for your company?"

Answers 3: (+) yes, (-) no, (dk) I don't know

Question 4: "What effect would the planned incentives have on your research and development activities?" (Matrix)

Answers 4 (for all items): (+) increase, (=) no change, (-) decrease, (dk) I don't know

- a) Expenditure on research and development
- b) Number of research and development projects

3.2.10 Interest in current economic topics

For another research project, in February 2020 all participants in the ifo Business Survey were asked about economic policy questions that had also been answered by top economists on the Chicago Booth IGM panel (Chicago Booth, 2019):

Question: "Please indicate the extent to which you agree with the respective statements below on some economic policy issues and how certain you are about your assessment." (Side-By-Side matrix)

Answer 1 (for all items): (++) strongly agree, (+) agree, (=) unsure, (-) disagree, (--) strongly disagree, (0) no opinion

Answer 2 (for all items): please rate your knowledge about the respective topic on a scale from 1 to 10, where 10 is greatest prior knowledge

- a) The introduction of a Europe-wide minimum wage of 12 euros per hour would make it significantly more difficult for low-skilled workers to find a job.
- b) The population of Europe as a whole will benefit economically over the next 10 years from the high immigration of refugees into the European Union since 2015.
- c) The increased use of robots and artificial intelligence will likely lead to a significant increase in long-term unemployment in the industrialized countries under unchanged conditions.
- d) The proportion of people over 65 years is rising in Europe. Therefore, the society as a whole would benefit from a higher retirement age that better reflects increased life expectancy.
- e) Free choice of residence and place of work across intra-European borders has, on average, benefited the Western European population economically since the 1980s.
- f) If China and other countries politically encourage the formation of very large international firms, the European population would be better off on average if competition authorities allowed mergers of firms into European champions, even if this would weaken competition.

3.2.11 Supply Chain Act

In June 2021 the German government introduced the Supply Chain Act to oblige companies to ensure basic labour and human rights standards within their supply chains. To analyse the effects of the new law as well as the reaction of the companies to the disruptions of the supply chains by the Covid-19 pandemic all participating companies (except construction companies) were asked in May 2021 the following questions in the months of the introduction of the new law:

Question 1a: "The Corona pandemic has disrupted supply chains worldwide. Does your company plan to change its procurement strategy in the future?"

Answers 1a: (+) Yes, (-) no, (0) no procurement usual, (dk) don't know

Question 1b: "If yes, by ..." (multiple selection)

Answers 1b: (1) diversification in procurement, (2) increased domestic procurement, (3) increased procurement from other EU countries, (4) insourcing, (5) increased warehousing, (6) better monitoring of supply chains

Question 2: "The German government is planning a national supply chain law. How big do you think the impact will be on your company?"

Answer 2: scale from 1 to 5, where 1 is no impact and 5 is big impact

Question 3: "What specific effects do they expect?"

Answer 3: free-form text response

3.3 Company-specific questions

3.3.1 Export markets

In June 2011, all manufacturing companies participating in the ifo Business Survey were asked on their share of exports and their export destinations:

Question 1a: "How large is the export share of your total sales?"

Answers 1a: (1) >45%, (2) 30-45%, (3) 15-30%, (4) <15%, (5) no exports

Question 1b: "If you export, in which region of the world do you generate your largest share of foreign sales?"

Answers 1b: (1) EU, (2) emerging Markets (namely China, India, Russia, Brazil, Turkey), (3) North America (USA, Canada), (4) South and Latin America (excluding Brazil), (5) Asia (excluding China and India), (6) Eastern Europe (without Russia), (7) Africa

Results: The results show a higher share of exports for certain industries (e.g. automotive sec-

tor) and for bigger companies. Furthermore, the data can be used to group the panel for vari-

ous analyses (e.g. companies with a high share of exports vs. companies with lower share,

companies that export to a certain market vs. other companies).

3.3.2 Family business

In February 2014 the companies in all sectors were asked directly whether they would

classify themselves as family businesses:

Question: "Do you consider your company a family business?"

Answers: (+) yes, (-) no

Results: Using this variable, the panel can be divided for analyses of the survey results specif-

ically for family businesses and other companies. This was done for example during the Covid-

19 pandemic to get separate results on the effects of the crisis on family business (Stiftung

Familienunternehmen, 2020).

3.3.3 Characteristics of medium sized companies

In August 2016 the companies in all sectors were surveyed on characteristics of medium sized

enterprises (in addition to sales and employees):

Question 1: "Does your company have more than four general managers?"

Answers 1: (+) yes, (-) no

Question 2: "Does at least one of the general managers hold shares in the company?"

Answers 2: (+) yes, (-) no

Question 3: "Would you classify your company as a "medium-sized" enterprise?"

Answers 3: (+) yes, (-) no

Results: These variables can be used for analyses of the panel structure as well as control

variables for other research projects.

3.3.4 Online shops and market places, share of online turnover

Sales via online stores, marketplaces and platforms have become of enormous im-

portance for retail companies. The participating companies of the trade sector were asked

questions on these topics in August 2016 and August 2019:

August 2016:

Question 1a: "In addition to your local store, do you sell your products via your own online store or via other online platforms?"

Answers 1a: (+) yes, (-) no

Question 1b: "If yes, ..."

Answers 1b: (1) own online store, (2) own online store as well as on other online platforms, (3) exclusively via other online platforms

Question 1c: "If yes: How high is the share of online trade in your total turnover?"

Answer 1c: ____ %

Question 1d: "If no, do you plan to introduce online sales in the next 12 months?"

Answers 1d: (+) yes, (-) no

August 2019:

Question 2: "How high is the share of the following distribution channels in your total turnover?" (Matrix)

Answers 2 (for all items): ____ %

- a) Own online store
- b) Marketplaces/platforms

Question 3: "How do you expect the importance of marketplaces/platforms to develop for your company in the next 5 years?" (Matrix)

Answers 3 (for all items): (--) decrease, (-) rather decrease, (=) stay the same, (+) rather increase, (++) increase

- a) Number of marketplaces/platforms used
- b) Turnover via marketplaces/platforms

Results: The results showed that the number of trade companies (wholesale and retail) that distributed their goods online clearly increased between 2016 and 2019 (Rumscheidt, 2020). Furthermore, the companies expected an increase of the importance of marketplaces for the following years. Future research might especially look at the developments regarding online sales during and after the Covid-19 pandemic.

3.3.5 Export of services, offering services abroad

There are no regular questions on exports in the ifo Business Survey for the service sector. To obtain an overview of foreign activities in the service sector, the participating companies were asked about it in August 2018:

Question 1a: "Does your company currently provide services to persons or companies based abroad and/or are corresponding activities planned in the next two years?"

Answers 1a: (+) yes, (-) no Question 1b: "If yes ..." (Matrix)

Answers 1b (for all items): (1) within Europe, (2) outside Europe

- a) currently
- b) planned

Question 2: "Which issues prevent or complicate your company's activities abroad?" (multiple selection)

Answers 2: (1) no need / interest on our part, (2) high risks / costs of market development, (3) lack of qualification / experience of employees, (4) market entry restrictions, (5) no demand for our offer, (6) lack of protection of intellectual property / data, (7) different standards / norms abroad, (8) cultural / language barriers

3.3.6 Business processes executed by external service providers

In August 2018 the manufacturing companies participating in the ifo Business Survey were asked about the involvement of external service providers in the execution of business processes:

Question 1: "Are business processes in your company provided by external service providers? Please relate your information to the total budget of the corresponding area." (Matrix)

Answers 1 (for all items): (1) no, (2) up to 25%, (3) up to 50%, (4) up to 75%, (5) up to 100%

- a) IT
- b) R&D
- c) Purchasing
- d) Marketing
- e) Finance
- f) Human Resources
- g) Logistics

Question 2: "How has changed/will change the extent of externally provided business processes in the following areas in the past 5 years/in the next 5 years?" (Side-By-Side matrix)

Answer 2.1 (for all items): (+) more, (=) unchanged, (-) less

Answer 2.2 (for all items): (1) for the past 5 years, (2) for the next 5 years

- a) IT
- b) R&D
- c) Purchasing
- d) Marketing
- e) Finance
- f) Human Resources
- g) Logistics

3.3.7 Share of foreign turnover

In September 2018 all participants of the ifo Business Survey were asked about the share of their turnover generated abroad:

Question: "What p	ercenta	ge of the turnover does your company generate abroad?"
Answer:	%	

Results: With the results of this question other variables can be examined for differences between companies with a higher share of turnover abroad and companies with a lower share or no turnover abroad.

3.3.8 Year of company foundation

Besides their share of turnover abroad, in September 2018 all participants of the ifo Business Survey were also asked about the age of their company:

Question: "In which year was your company founded?" **Answer**: ____

3.3.9 Department and position of the respondent(s)

Of fundamental importance for the quality of the survey results are the people interviewed within the participating companies. They should have a good overview of all relevant areas in the company so they can provide competent answers to questions concerning topics such as production, employment development, or pricing policy. It is therefore important to the ifo Institute that the questionnaires are completed by people who, as part of the management, have all the relevant information they need to answer the questions. A supplementary question in all sectors of the ifo Business Survey in November 2018 provides precise information on the company divisions and hierarchical levels from which the answers come:

Question 1: "In which division of your company is the questionnaire for the ifo Business Survey usually filled in?"

Answers 1: (1) Management / executive board, (2) Finance / controlling / accounting, (3) Production⁸, (4) Sales / marketing, (5) Other, namely: _____

Question 2: "Which position best describes the person who usually fills in the questionnaire?" **Answers 2**: (1) Owner, CEO, authorized representative, member of the executive board, (2) Department head, (3) Team leader, (4) Clerk, (5) Other, namely: ______

Results: In both questions, it was possible to mark more than one answer for cases in which the questionnaire is filled in by more than one person. With 77.3 percent, the greatest proportion of reports came directly from the management of the participating companies (all surveyed sectors). With regard to the position of the people filling in the questionnaires, over 80 percent are owners, CEOs, authorized representatives, or members of the executive board. More detailed results are shown in Sauer and Wohlrabe (2019).

⁸ This category was provided only for the manufacturing and the construction sector.

3.3.10 Importance of logistics services for the business activity

The participating companies of the manufacturing and the trade sector were asked in June 2019 about the impact of logistics services on their business activities:

Question 1: "How much has your business been hindered by the following factors of logistics services in the last 12 months?" (Matrix)

Answers 1 (for all items): (=) not at all, (+) very little, (++) little, (+++) strongly, (++++) very strongly

- a) Availability
- b) Prices
- c) Punctuality
- d) Quality

Additional question only for the trade sector:

Question 2: "If you also distribute your goods online: How much has your business been hindered by the following factors of logistics services for costumer delivery in the last 12 months?" (Matrix)

Answers 2 (for all items): (=) not at all, (+) very little, (++) little, (+++) strongly, (++++) very strongly, (0) Sale of goods is exclusively stationary

- a) Availability
- b) Prices
- c) Punctuality
- d) Quality

Results: Brandt et al., (2019) showed that there were no substantial externalities of logistic problems on the current business situation.

3.3.11 Highest educational attainment of the respondent

In February 2020 all participants of the ifo Business Survey were asked about their highest educational level:

Question: "What is your highest educational qualification?"

Answers: (1) Secondary or intermediate school, (2) high school diploma or equivalent, (3) Completed professional training, (4) Bachelor's degree or master's certificate, (5) diploma or master's degree, (6) doctorate, (7) other

3.3.12 Respondents' interest in economic policy topics and trust in experts

Also in February 2020, as additional control variables, all participants of the ifo Business Survey were asked about their interest in economic policy and their trust in the opinion of academic experts:

Question 1: "How interested are you in economics and economic policy debates?"

Answer 1: scale from 1 to 10

Question 2: "How much trust do you have in academic experts' opinions on policy issues?"

Answer 2: scale from 1 to 10

The questions were asked again in November 2021 and supplemented by the following questions:

Question 3: "How much trust do you have in the opinions of economic experts on the effects of the Covid-19 pandemic?"

Answer 3: scale from 1 to 10

Question 4: "How much trust do you have in the opinions of epidemiologists and virologists during the Covid-19 pandemic?"

Answer 4: scale from 1 to 10, where 10 is highest confidence

3.3.13 Decisions regarding production and price setting

In October 2020, the following questions about production plans and price settings were asked to all enterprises participating in the survey:

Question: "How important are the following points for your decision regarding production (respectively orders in the trade sector and human resources plans in the service sector) and / or pricing on a scale from 1 (very unimportant) to 5 (very important)?" (Matrix)

Answer (for all items): scale from 1 (very unimportant) to 5 (very important)

- a) expected developments in your own company
- b) expected developments in your own market segment
- c) expected macroeconomic developments

3.4 Other research questions

3.4.1 Innovation

In January 2009, all manufacturing companies participating in the ifo Business Survey were asked about factors for innovation:

Question: "How do you rate the following factors regarding your company's innovation climate?" (Matrix)

Answers (for all items): (+++) fully agree, (++) agree, (+) partly agree, (-) disagree, (0) factor is not relevant for our company

- a) The qualification level of our employees is favorable.
- b) The employees are always up to date with the latest technology relevant to our industry through training measures.

- c) Our employee suggestion scheme is an important source of innovation ideas in our company.
- d) Monetary incentives are in place for our employees to engage intensively in the innovation process.
- e) The wealth of experience of older employees is put to good use in our company.

3.4.2 Main bank relations

During the financial and economic crisis in 2008 and 2009, many companies in Germany experienced financing difficulties. In addition to the regular questions regarding credit constraints, in June 2009 all companies participating in the ifo Business Survey (except the construction sector) were asked about their main bank relationships:

Question 1a: "Do you maintain a long-standing and intensive business relationship with a bank?"

Answers 1a: (+) yes, (-) no Question 1b: "If yes, to a..."

Answers 1b: (1) savings bank, (2) cooperative bank, (3) private commercial bank, (4) state bank, (5) other bank

Results: At the time of the survey, especially large companies were affected by the banks' restrictive lending policies. The survey results suggested two reasons for that: Firstly, they were more affected by the recession – among other things because of their export orientation. Banks therefore were more reluctant to lend to such companies. Secondly, large companies were more likely to be customers of private commercial banks (and state banks), which were particularly restrictive in lending to all companies, regardless of their business situation (Abberger et al., 2009).

3.4.3 Effects of extreme weather events

Another research project looked at the impact of extreme weather events on companies and how companies respond to them. In November 2010 the participating manufacturing companies and in May 2019 all participating companies were asked about extreme weather events:

November 2020 (only for manufacturing companies):

Question 1: "How have extreme weather events affected value creation in your company in the past?" (Matrix)

Answers (for all items): (+) positive, (=) no impact, (-) negative, (0) no information

- a) heat waves
- b) cold waves
- c) drought
- d) heavy rain

e) storms

Question 2: "How do you assess the impact of predicted climate change on the following areas in your company?" (Matrix)

Answers (for all items): (+) positive, (=) no impact, (-) negative, (0) no information

- a) Purchasing
- b) Production
- c) Sales
- d) Waste Disposal
- e) Logistics
- f) Innovation
- g) Personnel

May 2019 (all sectors):

Question 1: "Has the region where your company is located been affected by the following extreme weather events in the last 10 years?" (Side-By-Side matrix)

Answers 1.1: (1) heat waves, (2) cold waves, (3) drought, (4) heavy rain, (5) storms **Answer 1.2**: (+) yes

Question 2: "Did these extreme weather events have an impact on your company's value creation?" (Side-By-Side matrix)

Answers 2.1: (1) heat waves, (2) cold waves, (3) drought, (4) heavy rain, (5) storms **Answers 2.2**: (+) Positive, (=) no impact, (-) negative

Question 3: "Does your company expect changes in the frequency or intensity of certain extreme weather events?" (Side-By-Side matrix)

Answers 3.1: (1) heat waves, (2) cold waves, (3) drought, (4) heavy rain, (5) storms **Answers 3.2**: (+) Increase, (=) no change, (-) decrease

Question 4: "Is your company currently prepared for possible negative consequences of extreme weather events (e.g. through additional insurance, provisions, technical precautions or other measures)?" (Side-By-Side matrix)

Answers 4.1: (1) heat waves, (2) cold waves, (3) drought, (4) heavy rain, (5) storms **Answers 4.2**: (+) yes, (=) not necessary, (-) no

Results: Berlemann and Lehmann (2020) showed that the share of German manufacturing companies influenced by extreme weather events has increased significantly between 2010 and 2019. Sectors with a particularly strong negative impact were construction, retail trade, and transport and storage.

3.4.4 Importance of flight connections for companies

In March 2013, all companies participating in the ifo Business Survey were asked about the importance of domestic and international flight connections for their company:

Question: "How important is it for your company to have a flight connection to destinations in ..." (Side-By-Side matrix)

Answers 1: (1) Germany, (2) Europe, (3) Worldwide

Answers 2: (++) very important, (+) important, (-) less important, (--) not important

3.4.5 Intended purpose of firm credits

In June 2016 all participating companies were asked about their credit negotiations in the past 12 months. The purpose of the question was on the one side to get information about the intended use of the firm credits and on the other side to evaluate the – from 2009 until 2016 - monthly credit question in the regular questionnaire of the ifo Business Survey:

Question 1a: "Have you concluded one or more credit agreements with banks in the past twelve months? (e.g. new loans, debt restructuring, or extension of loans/credit line)"

Answers 1a: (+) yes, (-) no

Question 1b: "if yes:"

Answers 1b: (1) amount and terms as expected, (2) amount as expected, but worse terms, (3) terms as expected, but lower amount, (4) lower amount and worse terms than expected

Question 1c: "if no, because:"

Answers 1c: (1) no need, (2) conditions unacceptable, (3) rejection by bank(s), (4) no realistic chance for credit

Question 2: "What was the purpose of the last loan you negotiated?" (multiple selection)

Answers 2: (1) Financing of current operating funds, (2) Financing of an investment,

(3) Other, please specify ______

Results: The responses of firms active in the credit market to the regular credit question were positively correlated with their individual experience (Hainz and Hristov, 2017). On base of the results the regular credit question was formulated differently and changed to a quarterly question in the following year.

3.4.6 GDP expectations of companies

As part of a research project on firm expectations, all companies participating in the ifo Business Survey were asked several times about their expectations for the rates of change in German GDP:

August 2018:

Question 1: "In your estimation, by what percentage will the real gross domestic product in Germany change in 2018 compared with 2017?"

Answer 1: ____%

March 2019 and August 2019:

Question: "In your estimation, by what percentage will the real gross domestic product in Germany change in the years listed below compared with the respective previous year?" (Matrix)

Answer (for all items): ____%

- a) 2019
- b) 2020

August 2020:

Question: "In your estimation, by what percentage will the real gross domestic product in Germany change in the years listed below compared with the respective previous year?" (Matrix)

Answer (for all items): ____%

- a) 2020
- b) 2021

Additional question in August 2018:

Question 2: "How important are general economic developments in Germany for your business situation?"

Answers 2: (++++) very important, (+++) important, (++) somewhat important, (+) less important, (-) unimportant

Results: Dovern et al. (2020) show that the firms' growth expectations are highly dispersed. The degree of dispersion depends on firm size and on how important the general economy is for the business of the companies, supporting theories of rational inattention.

3.4.7 Capacity utilization

The question on capacity utilization is asked regularly in the manufacturing sector (quarterly) and in the construction sector (monthly) as well as in the service sector (quarterly) in a slightly modified form (see section 2). For internal analyses, in January 2019, all participating companies in these sectors were asked about their average capacity utilization to get a comparative value:

For manufacturing sector and construction sector:

Question: "The annual average of the capacity utilization of our plants/machines (assuming a normal economic situation with no overutilization or underutilization) is ..."

Answer: _____ %.

For the service sector:

Question: "On annual average, we would normally be able to expand our business activities by ... (assuming a normal economic situation with no overutilization or underutilization of capacity)."

Answer: _____ %.

3.4.8 Uncertainty about demand

Business uncertainty has become an increasingly important research topic over the last decade. In December 2019 all participants of the ifo Business Survey (except construction companies) where asked about factors that lead to uncertainty about future demand:

Question: "The demand for your products/services depends on many factors. Please rate to what extent uncertainty regarding the following issues makes it difficult for you to estimate the future development of demand?" (Matrix)

Answer (for all items): scale from 1 to 5, where 1 is no relevance and 5 is high relevance

- a) Taxes
- b) Trade war
- c) Exchange rate
- d) Economic development in general
- e) Unemployment rate
- f) Inflation rate
- g) Interest rates

Results: The answers were used for various uncertainty research (e.g. Lautenbacher, 2020). Firms especially rated the economic development in general as a reason for uncertainty about the future demand.

3.4.9 Satisfaction with institutions and administration:

In September 2021 questions about the satisfaction of companies with political institutions and administration were asked in all sectors for a research project:

Question 1: "Overall, how satisfied is your company with local government and administration?" (Matrix)

Answer 1 (for all items): scale from 1 to 5, where 1 is very unsatisfied and 5 is very satisfied

- a) city or municipal administration
- b) district or county administration
- c) tax office
- d) employment agency

Question 2: "Overall, how satisfied is your company with the following social security institutions?" (Matrix)

Answer 2 (for all items): scale from 1 to 5, where 1 is very unsatisfied and 5 is very satisfied

- a) employers' liability insurance association
- b) German pension insurance and long-term care insurances

3.5 Questions on the effects of the Covid-19 crisis

Since the outbreak of the Covid-19 pandemic in early 2020 the effects of the crisis have been the overshadowing topic for the economy. The flexibility to include supplementary questions in the survey allowed the ifo Institute to promptly collect important data on various fields of the crisis. This information helped to get a better understanding of the effects and consequences for the enterprises and could be used for policy advice (e.g. for stimulus packages) as well as for research projects. A few questions were established over a longer time period, i.e. monthly or several times over the course of the crisis. This section will offer an overview of the supplementary questions on Covid-19 topics.

3.5.1 Outbreak of the pandemic

In February 2020, the German economy felt the first effects of the crisis, mainly by supply problems for some products and the cancellations of business trips or events like fairs. In March, the firstCovid-19-related questions were included in the monthly survey:

Question 1a: "How does the spread of the Corona virus currently affect your business?" **Answers 1a**: (+) positive, (=) no impact, (-) negative

Question 1b: "If there are negative effects on your company, what are they?" (multiple selection)

Answers 1b: (1) Decline in demand, (2) Business constraints at foreign subsidiaries, (3) Delivery delay or failure of intermediate goods or raw materials, (4) Delivery delay or failure of end products, (5) Increase in costs for intermediate goods or raw materials, (6) Decline in production, (7) Need for increased warehousing, (8) Delay/cancellation of business trips, (9) Other, namely: _______

Results: The results showed that especially the travel industry and the hospitality sector were affected negatively. Also the industry enterprises already sensed a strong decline in demand and production (Sauer and Wohlrabe, 2020a). Given the developments during March with increasing infection numbers and various lockdown measures, the results became even more important for more insight on the crisis. Amongst others, they were used for a first calculation of potential costs of the lockdown measures (Dorn et al., 2020).

3.5.2 Regularly surveyed Covid-19 questions

From April 2020 on, more supplementary questions were implemented every month to monitor developments in different industries during the crisis. The following questions were asked regularly, and their results can be compared for the whole course of the crisis:

Every month from April 2020 until September 2021 + December 2021:

Question 1: "Is there any effect of the Corona pandemic on your current business situation? Is it negative or positive?"

Answer 1: scale from -3 to +3, where -3 is negative and +3 is positive

Every month from May 2020 until December 2021:

Question 2a: "We currently have short-time work."

Answers 2a: (+) yes, (-) no

Question 2b: "if yes:"

Answers 2b: (1) A proportion of ____% of employees is currently working short-time.

(2) The average reduction in working hours for these employees is __%.

May 2020 until June 2021 + December 2021:

Question 3: "In the following, we ask you to estimate the further course of the crisis." (Matrix) **Answer 3** (for all items): ___ months

- a) For how long do you expect restrictions on public life in Germany due to the Corona pandemic?
- b) When do you think your business situation will return to normal?

June, November 2020, February, June 2021:

Question 4: "In which areas does the Corona crisis primarily pose problems for your company?" (Matrix)

Answer 4 (for all items): scale from 1 to 5, where 1 is no problems and 5 is big problems

- a) finances (e.g. liquidity, investments)
- b) domestic sales market (e.g. demand, order situation)
- c) foreign sales markets (e.g. demand, order situation)
- d) personnel (e.g. absences, staff shortages)
- e) purchasing / procurement (e.g. stockpiling, supply chains)
- f) governmental requirements (e.g. closures, hygiene concepts)

June, November 2020, February, June 2021, December 2021:

Question 5: "Are these problems threatening the existence of your company?" **Answers 5**: (+) yes, (-) no

Every month from February 2021 until August 2021 + December 2021:

Question 6: "What share of your employees currently work at least partially from home?" **Answer 6**: _____%

In the future the working from home question will be asked twice a year (February and August) in all sectors to monitor possible structural changes in the share of people working from home.

Results: These questions were used for research papers and analyses of the current situation of the German economy and to compare various developments for the enterprises during the pandemic (e.g. Litsche et al., 2020). Nowcasts of the current short time worker numbers (Link and Sauer, 2020) and the share of people working from home (Alipour et al., 2021a, 2021b)

were also implemented using these questions. Furthermore, these variables can be also suitable as control variables for various research papers. Balleer et al. (2020), for example, used the data from these question to study price-setting behavior to infer the relative importance of supply and demand during the Covid-19 pandemic. They found that supply and demand forces coexisted, but demand shortages dominated in the short run. (Buchheim et al., 2022a, 2022b) also use the data for analyses of the firms' anticipations of the consequences of the pandemic as well as expectations and behavior response.

The remaining supplementary questions on the Covid-19 crisis can be divided into different topic complexes.

3.5.3 Short-term effects of the crisis

The short-term effects of the crisis were covered by various questions, especially at the beginning of the crisis but also as the crisis progressed. This concerned, among other things, the reactions of the companies as well as the effects on sales and investments:

In April 2020, a few weeks into the first lockdown in Germany, all participants were asked on their reactions on the crisis.

The question was asked again in shorter versions in June 2020 and in November 2020 at the beginning of the second lockdown in Germany.

Question: "What measures has your company taken as a reaction on the Covid-19 pandemic?" (Matrix)

Answer (for all items): (+) yes

- a) Operational business:
 - I. Increased use of working from home
 - II. Short-time work
 - III. Reduction of overtime accounts and vacation
 - IV. Employment reductions (e.g. layoffs, non-renewals)
 - V. Plant closures, production shutdowns
 - VI. Increased warehousing
 - VII. Change of suppliers / diversification in procurement
 - VIII. Other, namely:
- b) Finance/Investment:
 - I. Use of existing credit lines
 - II. Opening up new credit lines
 - III. Use of governmental liquidity support
 - IV. Postponement of investment projects
 - V. Cancellation of investment projects
 - VI. Other, namely: _____

With various implemented measures against the pandemic, the companies were also asked how long they could survive an ongoing lockdown:

April 2020:

Question 1: "Numerous measures are currently being implemented to combat the Corona pandemic, such as school/university/business closures, no-contact orders, travel restrictions, etc. How long do you estimate your company could survive if these measures were maintained for an extended period of time?"

Answers 1: (1) less than one month, (2) 1 month, (3) 2 months, (4) 3 months, (5) 4 months, (6) 5 months, (7) 6 months, (8) more than 6 months

Question 2: "What aspect of the Corona pandemic is causing you the most problems?"

Answer 2: free-form text response

Question 3: "What action would you like to see policymakers take?"

Answer 3: free-form text response

The (expected) effects of the crisis on sales and investment in the year 2020 were surveyed in April 2020, August 2020, and February 2021 (investment only in August 2020). For the year 2021 the question was asked in March 2021 for sales respectively in July 2021 for investment:

Question: "What effect do you expect the Corona pandemic to have on your sales (investment activity) this year?"

Answers: (=) No effect, (+) Increase by __%, (-) Decrease by __%

The effects on the development of employee numbers for all enterprises were asked every 3 months starting in May2020:

Answer: _____

3.5.4 Effects of the crisis in the long run

The questions on the effects of the crisis in the long run mainly focused on changes within the enterprises (e.g. less business trips, more working from home and virtual meetings).

May until July 2020:

Question: "Do you think there will be permanent changes in your company even after the pandemic?"

Answer: scale from 1 to 5, where 1 is no changes and 5 is massive changes

May 2020:

Question 1: What permanent changes do you think are likely in your company after the pandemic? (multiple selection)

Answers 1: (1) less business travels, (2) more work in home office, (3) more automation, (4) higher production depth/diversification in procurement, (5) change of the product portfolio, (6) greater use of digital distribution channels, (7) increased use of digital planning methods *(only asked in the construction sector)*, (8) Other: _____

Question 2: "Is your company planning to increase investment in any of the following areas?" (multiple selection)

Answers 2: (1) Employee training, (2) Workplace (mobile working or office workplaces), (3) Production (R&D, automation, ...), (4) Supply chain management, (5) Other, namely: _____

June 2020:

Question: "What do you expect to be the long-term changes compared to the time before the outbreak of the pandemic for each of the following areas?" (Matrix)

Answers (for all items): (=) no changes, (+) Increase by ____%, (-) Decrease by ____%

- a) working from home
- b) business trips
- c) virtual meetings and conferences

3.5.5 Liquidity situation

Another big issue covered by various questions was the development of the liquidity situation and equity capital of the enterprises during the crisis as well their use of bank credits.

Mai 2020:

Question: "Assuming your revenues would remain at April levels for the time being, how long would your liquidity reserve last?"

Answers: (1) ___ months, (2) no liquidity shortage expected

August 2020:

Question 1: "What was your company's equity capital ratio at the end of 2019?"

Answer 1: %

Question 2: "Has your company's equity ratio changed as a result of the Corona crisis?" **Answer 2**: scale from -3 to +3, where -3 is decrease and +3 is increase

Question 3: "How has the availability of bank credits for your business evolved since March 2020?"

Answer 3: scale from -3 to +3, where -3 is negative and +3 is positive

Question 4: "Have lending rates changed for your business since March 2020? (100 basis points = 1 percentage point)"

Answers 4: (1) No changes, (2) Increase by ____ basis points, (3) Decrease by ____ basis points

Question 5: "What was your company's credit line in % of balance sheet total?" (Matrix)

Answers 5 (for all items): (1) _____%, (2) We do not have a credit line
a) March 2020
b) June 2020

Question 6: "To what degree was credit line utilized?" (Matrix)

Answers 6 (for all items): (1) _____%, (2) We do not have a credit line

- a) March 2020
- b) June 2020

Question 7: "What was your company's cash and cash equivalents in % of total assets?" (Matrix)

Answer 7 (for all items): ____%

- a) March 2020
- b) June 2020

October 2020:

Question: "Compared to December 2019, is your company currently using more or less of the following financing options?" (Matrix)

Answers (for all items): (+) increase, (=) no change, (-) decrease, (0) we don't have it

- a) Credit lines
- b) Bank credits (except credit line)
- c) Bonds
- d) Equity capital (incl. retained earnings)

February 2021:

Question 1: "What was your company's equity capital ratio at the end of 2020?" **Answer 1**: ______%

Question 2: "Has your company's equity capital ratio changed because of the Corona crisis?" **Answer 2**: scale from -3 to +3, where -3 is decrease and +3 is increase

Results: A study by Peichl et al. (2021) showed an overall moderate decrease in equity capital. However, the decline in equity capital was stronger in certain sectors that were hit harder by the crisis (e.g. hospitality, travel) and among small and medium-sized enterprises.

3.5.6 Governmental measures to help enterprises

In addition to short-time work and the suspension of the insolvency obligation, the German government has launched numerous other measures to help enterprises during the crisis (e.g. stimulus packages, tax deferrals, emergency liquidity assistance). Some supplementary questions also focused on how many enterprises made use of the various measures and how they assessed their efficacy.

April 2020:

Question 1: "Does your company make use of the option for tax deferrals or reducing tax prepayments?"

Answers 1: (+) yes, (-) no

Question 2: "If no, do you plan it for the future?"

Answers 2: (+) yes, (-) no

March 2021: (only in the trade and service sector)

Question 1: "Has your company applied for the following liquidity assistance programs or is it planning to do so?"

Answers 1: (1) application done, (2) application planned, (3) not eligible, (4) no need

Question 2: "If you have applied, has your company already received payments?"

Answers 2: (++) full payment received, (+) partly received, (=) no payment yet, (-) rejection

Question 3: "How helpful do you find the concept and implementation of these liquidity assistance programs?" (Matrix)

Answers 3 (for all items): school grades from 1 to 6, where 1 is very good and 6 is not sufficient

- a) November Assistance
- b) December Assistance
- c) Coronavirus Bridging Assistance II
- d) Coronavirus Bridging Assistance III
- e) KfW special programme

3.5.7 Supply bottlenecks

A last important topic especially at the beginning of the pandemic that became again more significant in 2021 were disruptions in the worldwide supply chains and the consequences for enterprises.

April 2020:

Question: "Are you currently affected by supply problems with important intermediate products?"

Answers: (+) yes, (-) no

May 2021:

Question 1a: "The Corona pandemic has disrupted supply chains worldwide. Does your company plan to change its procurement strategy in the future?"

Answers 1a: (+) yes, (-) no, (dk) don't know, (0) no procurement

Question 1b: "if yes, by:" (multiple selection)

Answers 1b: (1) diversification in procurement, (2) increased domestic procurement, (3) increased procurement from other EU countries, (4) insourcing, (5) increased warehousing, (6) better monitoring of supply chains

June 2021:

Question 1a: "How have the purchase prices for your intermediate products and raw materials developed on average in the last 3 months?"

Answers 1a: (=) No change, (+) Increase by ____%, (-) Decrease by ____%

Question 1b: "If increase: To what extent can you pass on the higher purchase prices to your customers?"

Answers 1b: (1) No passing on of the price increases possible. (2) We can pass on ____% of the higher purchase prices to our customers.

July 2021 until December 2021: (manufacturing sector, construction sector, trade sector)

Question 1a: "Is your company currently affected by a shortage of raw materials / intermediate products?" (construction: shortage of materials, trade: supply bottlenecks)

Answers 1a: (+) yes, (-) no

Question 1b: "If yes: What materials / intermediate products are affected by these bottlenecks?" (construction: shortage of materials, trade: supply bottlenecks)

Answer 1b: free-form text response

October 2021: (manufacturing sector, construction sector, trade sector)

Question: "If your sales activity is currently affected by supply bottlenecks: How long do you think these problems will continue?"

Answer: ____ months

Results: The main results on these questions are presented both in Wohlrabe (2021) as well as in Leiss and Wohlrabe (2021).

4 Data Access

The data from the ifo Business Survey on the microdata level can be accessed at the LMU-ifo Economics & Business Data Center (EBDC). The results in aggregated form (mostly as time series) can be requested at umfragedaten@ifo.de.

Researchers can access the microdata of the surveys at the EBDC (Seiler, 2012) under strict non-disclosure agreements free of charge for non-commercial, scientific usage. In addition to microdata from the regular ifo surveys, the EBDC offers linked data sets containing survey data from the ifo Institute as well as external balance sheet data from the company databases Amadeus, Orbis, and Hoppenstedt. In this way, company-specific expectations, estimates and plans from the ifo surveys can be compared with actual figures from balance sheet and structural data in the company databases. The microdata panel from the ifo Business Survey includes both historical and current data starting in 1980. The EBDC anonymizes the data and continuously expands the data sets both in terms of time and content. The website of the EBDC (https://www.ifo.de/EBDC) provides a comprehensive overview and description of the data sets that are hosted at the ifo Institute. Access to the EBDC Business Panels (including a

detailed documentation of all variables) can be requested via the online research application.⁹

The available time series for the German economy include all the regularly in all sectors surveyed variables. There are also time series on the sector level as well as on numerous subindustries with a sufficient number of participants. A full list with all available time series and order information can be found on the ifo website: https://www.ifo.de/en/unfragen/zeitreihen-bestellen (ifo Business Survey Data – List of Time Series Available). There are also datasets of some main indicators (e.g. the ifo Business Climate index for Germany) directly for download on the ifo website (https://www.ifo.de/umfragen/zeitreihen). Some time series for Western Germany from 1960 to 1990 are also available for download on the same website (Sauer 2020).

⁹ https://www.ifo.de/EBDC#Daten

5 Summary and Outlook

The wide range of surveyed questions in the ifo Business Survey offers a large potential for all kind of economic research and analyses. Furthermore, ifo tries to continuously evaluate the questionnaire and develop it further. As continuity in variables is an important feature to not get structural breaks in time series, changes in the formulation of regular surveyed questions are made only in rare cases. Nevertheless, the addition of new important topics in the survey is discussed continuously. For example, questions on business uncertainty were added over the last years. The supplementary questions are very useful for analyzing other topics and current developments in the German economy and also as input for various research projects. Furthermore, the supplementary questions can also be used for the introduction of new survey methods. Randomized questions are an example for such a new field. Therefore, it is possible to randomly divide the panel in different groups and ask the participants slightly different questions to analyze the influence of the wording or of the order of the answer categories.

Beyond the ifo Business Survey, ifo has a lot more survey activities. There are amongst others the ifo Investment Survey Manufacturing that surveys a large panel of manufacturing companies twice a year on their investment activities, the quarterly ifo Personnel Manager Survey that surveys companies from all sectors on HR questions and staff deployment. Furthermore, ifo conducts a quarterly Business Survey in the insurance sector. In the ifo Management-Survey, a selected group of decision-makers in German companies are asked irregularly about current economic policy issues and changes in the macroeconomic environment (see Sauer and Wohlrabe 2020b for detailed description of the methodology of all ifo surveys). These surveys also offer enormous potential for research projects and economic analyses. The microdata from all surveys can be accessed by researchers at the EBDC.

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Appendix

A The ifo Questionnaire, German

A.1 Manufacturing

Figure A.1.1 Manufacturing, monthly questionnaire, German

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Rücksendung erbeten bis 13. Nove umfragen@ifo.de Rückfragen bitte an:	mber 2019	Leibniz-Institut für Wirtschaftsforschung an der Universität München e.V. Postfach 86 04 60 81631 München		
Fax: 089 9224-1508 Frau Demmelhuber Tel: Fax: 089 9224-1911 Herrn Marjenko Tel:	089 9224-1284 089 9224-1382			
Ihr aktueller Informationsstand No Fragen bitte nur für inländische Standorte, angegeb und unter Ausschaftung rein saisonaler Schwankung Bereich/Erzeugnis: 123456 Herstellung von ggf. Bereichsabgrenzung	enen Bereich/Erzeugnis en beantworten.	Kenn-Nr. 8123456-12.34/12-1234		
AKTUELLE SITUATION 1. Wir beurteilen unsere derzeitige Geschäftslage als gut befriedigend schlecht 2. Wir beurteilen unsere Lagerbestände an unverkauften Fertigwaren als us lein usereichend ug groß Lagerhaltung nicht üblich 3. Unseren Auftragsbestand (sofern branchen- üblich) empfinden wir als a) insgesamt b) für den Export verhältnismäßig groß ausreichend uz klein wir exportieren nicht RÜCKBLICK - TENDENZEN IM OKTOBER 4. Die Nachfragesituation hat sich im Vergleich zum September gebessert inicht verändert verschlechtert 5. Unsere Auftragsbestand ist im Vergleich zum September gestiegen etwa gleich geblieben gesunken 6. Unsere Produktionstätigkeit ist im Vergleich zum September pestiegen etwa gleich geblieben gesunken keine nennenswerte inländische Produktion 7. Unsere Preise wurden im Vergleich zum September estiegen erhöht nicht verändert gesenkt 8. Die Zahl unserer Beschäftigten ist im Vergleich zum September gestiegen etwa gleich geblieben	PLÄNE UND ERWARTUNGEN FÜR DIE NÄCHSTEN 3 MONATE 9. Unsere Produktionstätigkeit wird voraussichtlich steigen etwa gleich bleiben abnehmen keine nennenswerte inländische Produktion 10. Unsere Preise werden voraussichtlich steigen etwa gleich bleiben sinken etwa gleich bleiben abnehmen wir exportieren nicht 11. Der Umfang unseres Exportgeschäfts wird voraussichtlich zunehmen etwa gleich bleiben abnehmen wir exportieren nicht 12. Die Zahl unserer Beschäftigten wird voraussichtlich steigen etwa gleich bleiben sinken ERWARTUNGEN FÜR DIE NÄCHSTEN 6 MONATE 13. Unsere Geschäftslage wird voraussichtlich eher günstiger eher gleich bleiben eher ungünstiger eher ginstiger eher gleich gilt uns derzeit leicht eher schwer schwer	SONDERFRAGEN		

Figure A.1.2: Manufacturing, Quarterly, bi-annual and annual questions, German

ifo INSTITUT ifo - Konjunkturumfrage Verarbeitendes Gewerbe ifo Institut – Zentrum für Makroökonomik und Befragungen an der Universität München e.V. Rücksendung erbeten bis ... Postfach 86 04 60 81631 München umfragen@ifo.de Rückfragen bitte an: Fax: 089 9224-1508 Frau Demmelhuber Tel: 089 9224-1284 Fax: 089 9224-1911 Herrn Marjenko Tel: 089 9224-1382 **Ihr aktueller Informationsstand 2019** Kenn-Nr. 8123456-12.34/12-1234 Fragen bitte nur für inländische Standorte, angegebenen Bereich/Erzeugnis und unter Ausschaltung rein saisonaler Schwankungen beantworten. Bereich/Erzeugnis: 123456 Herstellung von xxx SONDERFRAGEN VIERTELJÄHRLICH JÄHRLICH JANUAR - APRIL - JULI - OKTOBER MÄRZ - JUNI - SEPTEMBER - DEZEMBER A) Unsere Auftragsbestände entsprechen der-A1) Wir arbeiten zurzeit mit Überstunden A1) Die Ertragssituation* unseres Unternehmens - gemessen am Betriebsergebnis aus zeit einer durchschnittlichen Produktion von ∏ja gewöhnlicher Geschäftstätigkeit -Monat(en) wenn ja, mehr als betriebsüblich a) beurteilen wir derzeit als B) Die Ausnutzung unserer Anlagen □ja □nein (betriebsübliche Vollausnutzung = 100%) ☐ befriedigend beträgt **gegenwärtig** schlecht B1) Wir haben zurzeit Kurzarbeit □ 30 % □ 70 % b) hat sich **gegenüber Herbst 2018** 95 % 100 % **40** % 75 % □ verbessert□ nicht verändert 50 % 60 % 80 % 85 % B2) Im Laufe der nächsten 3 Monate werden wir verschlechtert mehr als 100%, und zwar: voraussichtlich kurzarbeiten C) Unter Berücksichtigung unseres gegen-* Falls Sie mehrere Fragebögen für verschiedene wärtigen Auftragsbestandes und des in den Produkte erhalten, beantworten Sie diese Sonnächsten 12 Monaten erwarteten Auftragseinderfragen für das gesamte Unternehmen bitte C) Wir haben in den vergangenen 3 Monaten gangs halten wir unsere derzeitige technische Kreditverhandlungen mit Banken geführt. nur auf einem Fragebogen. Kapazität für A2) Die Umsatzrendite unseres Unternehmens mehr als ausreichend wenn ja, die Banken verhielten sich dabei: betrug 2018** ausreichend entgegenkommend nicht ausreichend b) Verlust: a) Überschuss: D) Unsere ${f Produktionst\"atigkeit}$ wird ${f zurzeit}$ restriktiv ☐ bis 1 % 0 bis -1 % behindert über 1 bis 2 % ¬ unter -1 bis -2 % nein über 2 bis 3 % unter -2 bis -3 % ☐ ja ☐ nein kein Bedarf an einem Bankkredit andere Gründe unter -3 bis -4 % über 3 bis 4 % ☐ über 4 % unter -4 % wenn ja, durch folgende Faktoren: zu wenig Aufträge und zwar ca. Mangel an Arbeitskräften insgesamt JÄHRLICH Mangel an Fachkräften ** bzw. in dem Geschäftsjahr, das schwerpunktmä-☐ Finanzierungsengpässe ☐ Mangel an Rohstoffen / Vormaterialien ☐ zu geringe technische Kapazitäten ßig in das Jahr 2018 fällt. FEBRUAR A1) Anzahl der beschäftigten Personen B1) Unsere Investitionen waren im vergangenen sonstige Faktoren Wir beschäftigen im **gesamten Unternehmen** (nur inländische Betriebe) Jahr (2018 gegenüber 2017) E) Unsere Wettbewerbsposition hat sich in den 2018 letzten 3 Monaten gegenüber den 3 Monaten Personen Gesamtinvestitionen davor A2) Davon entfallen auf den Erzeugnisbereich П - Bauten a) auf dem Inlandsmarkt Personen uerbessert – Ausrüstungen nicht verändert verschlechtert (evtl. Schätzung nach Umsatzanteil) - Software / Datenbanken B2) Unsere Investitionen werden voraussichtlich im laufenden Jahr (2019 gegenüber 2018) auf den Auslandsmärkten 2019 b) innerhalb der EU c) außerhalb der EU = verbessert Gesamtinvestitionen nicht verändert – Bauten verschlechtert

wir exportieren nicht

– Ausrüstungen – Software / Datenbanken

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SONDERFRAGEN								
JÄHRLICH								
AUGUST	NOVEMBER				DEZEMBER			
A) Ist Ihr Unternehmen als Aussteller auf inter- nationalen Fachmessen vertreten?	A1) Unsere Investitionen sind i (2019 gegenüber 2018)	m lauf e	enden	Jahr	C1) Wir haben 2019 im Erzeugi Innovationen* im	nisbereich		
☐ ja ☐ nein	2019	+	=	_	a) Produktbereich b) P	roduktionsbereich		
wenn ja, auf internationalen Fachmessen	Gesamtinvestitionen				realisiert			
in Deutschland	– Bauten				☐ abgebrochen ☐ Planung abgeso	hlossen \square		
☐ im europäischen Ausland ☐ im außereuropäischen Ausland	– Ausrüstungen				noch im Planun	gsstadium 🗌		
im ausereuropaischen Austand	– Software / Datenbanken				nicht vorgesehe	_		
SEPTEMBER	A2) Unsere Investitionen werd	en vora	ussich	ntlich	C2) Haben Sie im Jahr 2019 FuE-Aktivitäter durchgeführt?			
A1) Die Ertragssituation* unseres Unterneh-	im kommenden Jahr (2020	gegen	über 2	019)	□ ja			
mens - gemessen am Betriebsergebnis aus	2020	+	=	_	nein			
gewöhnlicher Geschäftstätigkeit - a) beurteilen wir derzeit als	Gesamtinvestitionen				a) Bezogen auf die Beschäftig	ten des Erzeugnis-		
gut	– Bauten				bereiches betrug der Antei	l des FuE-Perso-		
befriedigend	– Ausrüstungen				nals:			
schlecht	– Software / Datenbanken							
b) hat sich gegenüber dem 1. Vierteljahr 2019 verbessert					 b) Bezogen auf den Umsatz des Erzeugnisbe reiches betrug der Anteil der FuE-Ausgabe 			
nicht verändert					%	. rue nasgabeni		
verschlechtert					C3) 2019 befanden sich unsere Produkte d			
 Falls Sie mehrere Fragebögen für verschiedene Produkte erhalten, beantworten Sie diese Son- derfragen für das gesamte Unternehmen bitte 					Erzeugnisbereiches – gemessen an Ihre Gesamtumsatz – in folgenden Phasen (Schätzwerte genügen):			
nur auf einem Fragebogen.	-				Markteinführungsphase (Innovation)	%		
A2) Voraussichtlicher Jahresüberschuss nach Steuern bzwverlust unseres Unternehmens in % des Nettoumsatzes in 2019**					Wachstumsphase	%		
a) Überschuss: b) Verlust:					Stagnationsphase	%		
bis 1 %					Schrumpfungsphase	%		
□ über 3 bis 4 % □ unter -3 bis -4 % □ unter -4 %					_	100 %		
und zwar ca% und zwar ca%								
** bzw. in dem Geschäftsjahr, das schwerpunkt- mäßig in das Jahr 2019 fällt.					 * Innovationen sind Neuerung Verbesserungen im Produkt tionsbereich 			

A.2 Services

Figure A.2.1 Services, monthly questionnaire, German

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Figure A.2.2: Services, Quarterly, bi-annual and annual questions, German

ifo INSTITUT ifo - Konjunkturumfrage Dienstleistungen ifo Institut – Zentrum für Makroökonomik und Befragungen an der Universität München e.V. Rücksendung erbeten bis ... Postfach 86 04 60 81631 München bauer@ifo.de Rückfragen bitte an: Fax: 089 9224-1911 Tel: 089 9224-1230 Herrn Brandt Tel: 089 9224-1351 Fax: 089 9224-1463 Fax: 089 907795-1230 Ihr aktueller Informationsstand 2019 Kenn-Nr. 19-12345-12345 $Fragen\,bitte\,nur\,f\"{u}r\,inl\"{a}ndische\,Standorte\,und\,unter\,Ausschaltung\,rein\,saisonaler\,Schwankungen\,beantworten.$ Bereich: 1234567 Erbringung von Dienstleistung xxx SONDERFRAGEN VIERTELJÄHRLICH JÄHRLICH JANUAR - APRIL - JULI - OKTOBER A) Unsere Geschäftstätigkeit wird zurzeit A1) Unsere Investitionen waren im vergangenen Jahr (2018 gegenüber 2017) □ ja 2018 nein Gesamtinvestitionen wenn ja, durch folgende Faktoren: – Bauten 🗌 zu wenig Aufträge / unzureichende Nachfrage - Ausrüstungen ☐ Mangel an Arbeitskräften insgesamt ☐ Mangel an Fachkräften – Software / Datenbanken ☐ Finanzierungsengpässe A2) Unsere Investitionen werden voraussichtlich im laufenden ☐ zu geringe technische Kapazitäten Jahr (2019 gegenüber 2018) ☐ Raummangel / Geschäftsausstattung 2019 ungünstige Wetterlage \square sonstige Faktoren Gesamtinvestitionen - Bauten П B) Könnten Sie gegenwärtig eine zunehmende Nachfrage mit den in Ihrem Unternehmen vorhandenen Kapazitäten bedienen? – Ausrüstungen

weim ju. vin konnten unse	re oesenanstatigheit ann						
% ausweiten.							
(Prozentangabe bitte auf ga	anze Zahl runden)						
ÄRZ - JUNI - SEPTEMBER - DE	ZEMBER	NOVEMBER					
Wir haben in den vergange verhandlungen mit Banker		A1) Unsere Investitionen sind im laufende 2018)	∍n Jahr (2019	geger)	nüber		
□ ja	☐ nein	2019	+	=	_		
wenn ja, die Banken	wenn nein:	Gesamtinvestitionen					
verhielten sich dabei:	kein Bedarf an einem	– Bauten					
☐ entgegenkommend ☐ normal	Bankkredit □ andere Gründe	– Ausrüstungen					
restriktiv	andere didinde	– Software / Datenbanken					
		A2) Unsere Investitionen werden voraussichtlich im kommenden Jahr (2020 gegenüber 2019)					

- Software / Datenbanken

2020

Gesamtinvestitionen

– Software / Datenbanken

– Ausrüstungen

- Bauten

🗌 ја

M

□ nein

wenn ja: Wir könnten unsere Geschäftstätigkeit um

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Paraish 1224E67 Eubrine

Defericn: 1234567 Erbringung von Dienstleistung xxx								
SONDERFRAGEN								
ALLE 2 JAHRE								
a) Umsatz* 2018 in Euro bis 50 T 50 bis 100 T 100 bis 250 T 250 bis 500 T 500 T bis 1 Mill. 1 bis 2 Mill. 2 bis 5 Mill. 10 bis 25 Mill. 25 bis 50 Mill. 55 bis 100 Mill.	☐ 100 bis 250 Mill. ☐ 250 bis 500 Mill. ☐ 500 Mill. bis 1 Mrd. ☐ 1 bis 2 Mrd. ☐ 2 bis 5 Mrd. ☐ 5 bis 10 Mrd. ☐ 10 bis 25 Mrd. ☐ 25 bis 50 Mrd. ☐ 25 bis 50 Mrd. ☐ 100 Mrd. und mehr	b) Anzahl der Beschäfti	gten**					
ne Firmenumsätze) bzw. je	nur den Außenumsatz (ohne inter- e nach Branche z.B. Honorarumsatz nen (Makler), Neugeschäft (Leasing-		n einschl. Inhaber, mithelfende Familien- ifte, Auszubildende und geringfügig					

A.3 Trade

Figure A.3.1 Trade, monthly questionnaire, German

ifo INSTITUT fo - Konjunkturumfrage Einzel-/Großhandel ifo Institut – Zentrum für Makroökonomik und Befragungen Leibniz-Institut für Wirtschaftsforschung an der Universität München e.V. Rücksendung erbeten bis 12. November 2019 Postfach 86 04 60 kt-handel@ifo.de Frau Zieglmeier Fau: 089 9224-1463 Frau Rumscheidt Fax: 089 9810-8116 Rückfragen bitte an: 81631 München Tel: 089 9224-1329 Tel: 089 9224-1263 Ihr aktueller Informationsstand November 2019 Kenn-Nr. 6123456-12.34/12-1234 Fragen bitte nur für inländische Standorte und unter Ausschaltung rein saisonaler Schwankungen beantworten. Bereich: 123456 Einzelhandel bzw. Großhandel mit xxxx AKTUELLE SITUATION ERWARTUNGEN FÜR DIE NÄCHSTEN 6 MONATE 1. Wir beurteilen unsere derzeitige Geschäftslage als 9. Unsere Geschäftslage wird voraussichtlich ☐ eher günstiger □ befriedigend ☐ eher gleich bleiben ☐ schlecht ☐ eher ungünstiger 2. Wir beurteilen unsere Lagerbestände als 10. Die **Entwicklung** unserer Geschäftslage vorherzusagen, fällt uns derzeit □ zu klein ☐ leicht ☐ ausreichend ☐ zu groß eher leicht O Lagerhaltung nicht üblich eher schwer schwer RÜCKBLICK - TENDENZEN IM OKTOBER 3. Unser **Umsatz** ist im Oktober 2019 gegenüber Oktober 2018 ☐ gestiegen ☐ unverändert geblieben ☐ gesunken 4. Unsere Verkaufspreise wurden im Vergleich zum September \square erhöht ☐ nicht verändert ☐ gesenkt 5. Die Zahl unserer Beschäftigten ist im Vergleich zum September ☐ gestiegen □ etwa gleich geblieben ☐ gesunken PLÄNE UND ERWARTUNGEN FÜR DIE NÄCHSTEN 3 MONATE 6. Unsere Verkaufspreise werden voraussichtlich ☐ steigen etwa gleich bleiben 7. Unsere Bestellungen werden voraussichtlich □ erhöht □ nicht verändert □ verringert 8. Die Zahl unserer Beschäftigten wird voraussichtlich ☐ steigen

☐ etwa gleich bleiben

☐ sinken

Figure A.3.2: Trade, Quarterly, bi-annual and annual questions, German

ITO INSTITUT fo - Konjunkturumfrage Einzel-/Großhandel ifo Institut – Zentrum für Makroökonomik und Befragungen an der Universität München e.V. Rücksendung erbeten bis ... Postfach 86 04 60 81631 München kt-handel@ifo.de Rückfragen bitte an: Fax: 089 9224-1463 089 9224-1329 Frau Zieglmeier Fax: 089 9810-8116 Frau Rumscheidt Tel: 089 9224-1263 Ihr aktueller Informationsstand 2019 Kenn-Nr. 6123456-12.34/12-1234 Fragen bitte nur für inländische Standorte und unter Ausschaltung rein saisonaler Schwankungen beantworten. Bereich: 123456 Einzelhandel bzw. Großhandel mit xxxx SONDERFRAGEN VIERTELJÄHRLICH JÄHRLICH A1) Anzahl der beschäftigten Personen A) Unsere Umsatztätigkeit wird zurzeit behindert Wir beschäftigen in unserem Betrieb (einschl. mithelfende Familienangehörige, Auszubildende, Aushilfen) ☐ nein wenn ja, durch folgende Faktoren: ☐ schwache Nachfrage ☐ Mangel an Arbeitskräften insgesamt A2) Unser Gesamtumsatz* (in Euro) betrug im letzten Geschäftsjahr ☐ Mangel an Fachkräften unter 0,25 Mio. ☐ 5,0 - 12,5 Mio. ☐ Finanzierungsengpässe ____ 0,25 - 0,5 Mio. ☐ 12,5 - 25,0 Mio. ☐ Mangel an geeigneten Räumlichkeiten / Gewerbeflächen ☐ 25,0 - 50,0 Mio. ☐ 50 Mio. - 1,0 Mrd. ☐ 0,5 - 1,0 Mio. unzureichende Geschäftsausstattung, Fahrzeuge etc. ☐ 1,0 - 2,5 Mio. ungünstige Wetterlage ☐ 2,5 - 5,0 Mio. ☐ über 1,0 Mrd. ☐ sonstige Faktoren JANUAR - APRIL - JULI - OKTOBER - NUR IM EINZELHANDEL A1) Unsere Investitionen waren im vergangenen Jahr B) Die Kundenfrequenz war im Durchschnitt des (2018 gegenüber 2017) abgelaufenen Ouartals ... a) Lokaler Standort b) Online-Präsenz Gesamtinvestitionen \square hoch ☐ hoch – Bauten ☐ saisonüblich ☐ saisonüblich ☐ niedrig – Ausrüstungen O kein lokaler Standort O keine Online-Präsenz – Software / Datenbanken A2) Unsere Investitionen werden voraussichtlich im laufenden MÄRZ - JUNI - SEPTEMBER - DEZEMBER Jahr (2019 gegenüber 2018) A) Wir haben in den vergangenen 3 Monaten Kreditverhand-2019 lungen mit Banken geführt. Gesamtinvestitionen \square nein – Bauten wenn ja: wenn nein: – Ausrüstungen die Banken verhielten sich dabei: ☐ kein Bedarf an einem – Software / Datenbanken □ entgegenkommend Bankkredit □ andere Gründe □ normal B) Unser Jahresumsatz wird sich im Vergleich zum Vorjahr ☐ restriktiv voraussichtlich

□ erhöhen□ nicht verändern□ verringern

ifo - Konjunkturumfrage Einzel-/Großhandel

ifo Institut – Zentrum für Makroökonomik und Befragungen

Rücksendung erbeten bis ...

 kt-handel@ifo.de
 Rückfragen bitte an:
 5 (89 9224-1463)
 Frau Zieglmeier
 Tel:
 089 9224-1329

 Fax:
 089 9810-8116
 Frau Rumscheidt
 Tel:
 089 9224-1263

Ihr aktueller Informationsstand 2019

Fragen bitte nur für inländische Standorte und unter Ausschaltung rein saisonaler Schwankungen beantworten.

Bereich: 123456 Einzelhandel bzw. Großhandel mit xxxx



Leibniz-Institut für Wirtschaftsforschung an der Universität München e.V.

Postfach 86 04 60 81631 München

Kenn-Nr. 6123456-12.34/12-1234

SONDERFRAGEN								
JÄHRLICH								
AUGUST - NUR IM GROSSHANDEL	NOVEMBER							
A) Ist Ihr Unternehmen als Aussteller auf internationalen Fachmessen vertreten?	A1) Unsere Investitionen sind im laufenden Jahr (2019 gegenüber 2018)							
□ja	2019	+	=	_				
☐ nein	Gesamtinvestitionen							
wenn ja, auf internationalen Fachmessen	– Bauten	en						
☐ in Deutschland ☐ im europäischen Ausland	– Ausrüstungen			= -				
im außereuropäischen Ausland	– Software / Datenbanken							
	A2) Unsere Investitionen werden voraussichtlich im kommenden Jahr (2020 gegenüber 2019)							
	2020	+	=	-				
	Gesamtinvestitionen							
	– Bauten							
	– Ausrüstungen							
	– Software / Datenbanken							

A.4 Construction

Figure A.4.1 Construction, monthly questionnaire, German

	prieto@ifo.de Fragen bitte nur i beantworten. Bit *KU-I ifo I Leib an c Zen Frau Pos	entrum für M. ng erbeten Fax: +49 (0 ür inländische S te nur die auf Ih Bau* nstitut vniz-Institut ler Universit	akroökonomik bis Mittwo)89 9810-8116 Standorte und ur ren Arbeitsberei für Wirtschaf ät München kroökonomil	und Befragun; ch, den 13. Fax: +49 (0): nter Ausschaltun ch zutreffenden ftsforschung e.V.	gen November 2 89 9224-1463 g rein saisonaler S Spalten ausfüllen.	Schwankunge	Leibniz-Institut für Wirtschaftsforschung an der Universität München e.V. Rückfragen bitte an Frau Prieto Tel: 089 9224-1702 Herrn Leiss Tel: 089 9224-1358 1123456-123.12.1234 Ihr aktueller Informationsstand November 2019
	Straßenbau	Sonstiger Tiefbau	Öffentlicher Hochbau	Gewerblicher Hochbau	Wohnungsbau insgesamt	Wohnungs Gebäude mit	ibau mind. 3 Whg
	AKTUELLE SI						
			eitige Geschäft				gut befriedigend schlecht
			(sofern branche				verhältnismäßig groß ausreichend zu klein
	4. Unsere Bau			———	:hschnittlichen P		Monat(en)
							mehr als Selbstkosten deckend Selbstkosten deckend nicht mehr Selbstkosten deckend
	S. Onsere Bau	atigkeit wird 2	curzeit behinde				ja nein
_	wenn ja, du	rch folgende F	aktoren:				zu wenig Aufträge Auftragsstornierungen Mangel an Arbeitskräften insgesamt Mangel an Fachkräften Finanzierungsengpässe Materialknappheit / unzureichende techn. Ausstattung ungünstige Wetterlage sonstige Faktoren
	RÜCKBLICK						
	6. Unsere Baut	ätigkeit ist in d	den vergangene	en 3 Monaten			gestiegen etwa gleich geblieben gesunken
	7. Unser Besta	nd an Bauauft	rägen ist im Ok	tober im Vergle	ich zum Septem	ber	
							gestiegen etwa gleich geblieben gesunken
		oreise wurden	im Oktober im '	Vergleich zum S			
	Ihre Angaben werde	n streng vertraulic	h behandelt. Der ge	Setzliche Datenschu	utz ist voll gewährleis	tet.	erhöht nicht verändert gesenkt
	Datonechutzorkläru	no www ifo de/Da	tenschutz-Umfrager	n			Ritte wenden!

ifo INSTITUT

Straßenbau	Sonstiger Tiefbau	Öffentlicher Hochbau	Gewerblicher Hochbau	Wohnungsl insgesam				
PLÄNE UND I	ERWARTUNGE	N FÜR DIE NÄC	HSTEN 3 MON	ATE				
9. Unsere Baut	ätigkeit wird v	oraussichtlich						
							steigen etwa gleich bleiben abnehmen	
10. Unsere Bau	oreise werden	voraussichtlich						
							steigen etwa gleich bleiben sinken	
ERWARTUNG	EN FÜR DIE N	ÄCHSTEN 6 MC	ONATE					
11. Unsere Gesc	: häftslage wird	voraussichtlich	1					
							eher günstiger eher gleich bleiben eher ungünstiger	
12. Die Entwick	lung unserer G	eschäftslage vo	orherzusagen, f	ällt uns der	zeit			
							leicht eher leicht eher schwer schwer	
KAPAZITÄTS	AUSLASTUNG				BE:	SCHÄFTIGT	ΓE	
13. Die Ausnutz Vollausnutz			ität (betriebsüb r tig (Angaben ir			e Zahl unse raussichtli	erer Beschäftigten wird in de ch	en nächsten 3 Monaten
30 40 50 60	70 75 80 85	90 95 100 m	ehr als 100 %, un	nd zwar:	a) in	sgesamt	b) gewerbl. Arbei	tnehmer c) Angestellte
				e Geräte			ich bleiben	
				räte für n Tiefbau			∟ erer Beschäftigten ist im Okt	ober im Vergleich zum
			(0.77.77	räte für n Hochbau		ptember		
			de	iiiiociibau	a) in	sgesamt	b) gewerbl. Arbei	tnehmer c) Angestellte
						gestieger etwa glei gesunker	ch geblieben 🗌	

Figure A.4.2: Construction, Quarterly, bi-annual and annual questions, German

	ifo Institut – Z Rücksendu prieto@ifo.de Fragen bitte nurf	Zentrum für Ma ng erbeten Fax: +49 (0 für inländische S	akroökonomik bis)89 9810-8116 Standorte und un	uptgewerbe und Befragungen Fax: +49 (0)89 9224-14t tter Ausschaltung rein saisor ch zutreffenden Spalten aus	naler S	chwankungen	Leibniz an der Rückt Frau I	z-Insti Unive frage Prieto	NSTITU uut für Wirtschaftsforr rsität München e.V. n bitte an Tel: 089 9224 Tel: 089 9224	schung I-1702
	Leib an c Zen Frau Pos	nstitut oniz-Institut Ier Universit	0	•			Ken Ihrak 2019	tuelle	r. 1123456-:	123.12.1234 nd
	Straßenbau	Sonstiger Tiefbau	Öffentlicher Hochbau	Gewerblicher Wohnungs Hochbau insgesar		Wohnungsb Gebäude mit m				
-	SONDERFRA	GEN								
	VIERTELJÄH	RLICH			JÄ	HRLICH				
	MÄRZ - JUNI	- SEPTEMBER	- DEZEMBER		FE	BRUAR				
MÄRZ - JUNI - SEPTEMBER - DEZEMBER A) Wir haben in den vergangenen 3 Monaten Kreditverhandlungen mit Banken geführt. ja					B) Wirkungsbereich der Firma (nur von der Hauptstelle, nicht von der Niederlassungen zu beantworten) Von unseren Umsätzen im Jahr 2018 entfielen ca					
	□ restriktiv					:a%	auf Baustel	len ir	anderen Bundes	ländern
	HALBJÄHRLI				c	:a%	auf Baustel	len ir	n Ausland	
	APRIL - SEPT				-	100 %	Umsatz ins	gesar	nt	
	A) Hatten Sie i	n den letzten 6	Monaten Prob		JU	JNI				
	wenn ja, fol			•					orjahres (= 100%)	
	□ säumige □ Abwerbu	ıng von Arbeits		per		nsgesamt	öffentliche Auftraggel	•	n angeben, Schät:	zungen genugen)
	darunte	r:	Bestimmungen durch den Auftr	aggeber	C	ca %	ca	_%	Fachlosvergabe (Einzelgewerke d	
_			hme durch den auf das billigste	Auftraggeber und nicht auf das wirt-	C	ca %	ca	%	Tätigkeit als Gene und -übernehme	
		tlich annehmb	arste Angebot		(ca %	ca	%	Sonstiges	
	JÄHRLICH					100%				
	FEBRUAR					Wir arbeiten r Generalübern		als G e	neralunternehm	er bzw.
	,		Jahresumsatz	2018 entfielen auf Sub-		m allgemeine		bei ö	offentlichen Auftra	aggebern
	unternehm		laiatumaan daa	Jahres 2018 antijalan		☐ ja ☐ nein			ja nein	
	ca		n des Bauhaupt	Jahres 2018 entfielen			ler Auftragg	_	Aufträge als Gene	eralunternehmer-
			n des Ausbauge	_	l		rnehmerleis		zu vergeben, hat s	
			oortunternehme			m allgemeine		bei d	offentlichen Auftr	aggebern
						verstärkt				
	100 %		ge Unternehme nehmerleistung			ist gleich ;verminde				
	ca	% davo		ngen ausländischer	B3) (– Gibt es vergal	erechtliche	- Hür	den für öffentliche n/-übernehmerlei:	

□ ja

Straßenbau	Sonstiger Tiefbau	Öffentlich Hochba		verblicher Iochbau	Wohnungsb: insgesamt					
SONDERFRA	GEN									
JÄHRLICH										
JULI						OKTOBER				
	ung geräteinter verpflichten wi nein					A) Im Septembe	er wurden bei		i den geleistet	:.
A2) ca9 entfielen au		018 vorhan	denen G	ierätekapaz	zität					
AUGUST						DEZEMBER				
,	Umgatz auf die folgenden Bausnarten verteilte. (Schätzung genügt								er erzielter	
☐ gewer☐ kaufm☐ gewer☐ Bauin	Fachkräfte für f bliche Berufe nännische Beru bliches Führun genieur bliche Auszubil	fe gspersonal		er:		Straßenbau %	Sonstiger Tiefbau %	Öffentlicher Hochbau %	cher Bau	Wohnungs- bau %
b) Wir hatten P	robleme , die o	ffenen Stel	len zu be	esetzen.		B) Im Jahresdur	chschnitt 201		Zahl unserer I	Beschäftigten:
□ ja □	nein						eiter			
c) Wie lange w	aren die offene	n Stellen ui	nbesetzt	(in Monate	,	Beschäftigte insgesamt				
		0 bis 3	_		noch	C) Wir machen i		ermonaten Be	triebsurlaub	ı
gewerbliche						wenn ja:	_			
kaufmänn. B	ereich rungspersonal					a) Der Betriebsu	ırlaub findet l	nauptsächlich	statt im:	
Bauingenieu						☐ Juni	_	Juli		
gewerbl. Aus		П	П			☐ August		Septembe	r	
•		_	_	_	_	b) Die Dauer de		_		
	6 von diesen of Arbeit gemelde		en wurde	en der Bun d	des-	☐ 1 Woche] 2 Wochen	☐ 3 We läng	ochen und ger
e) Die Suche na einfache	ach Fachkräfte r r [n gestaltet unver		_	m Vorjahr chwieriger	c) Wir melden in junkturumfra Betriebsurlau	ge einen Rücl ıb zurückzufü	kgang der Bau		

B The ifo Questionnaire, English translation

B.1 Manufacturing

Figure B.1.1 Manufacturing, monthly questionnaire, English translation

ifo - Business survey for manufaction Institute - Center for Macroeconomics and		ifo INSTITUT			
Please respond by		Leibniz-Institut für Wirtschaftsforschung an der Universität München e.V. Postbox 86 04 60 81631 Munich			
Please base responses only on domestic locations, s and disregarding purely seasonal fluctuations. Sector/product: 123456 Manufacture of sector designation (if appli)	XXX	ID No. 8123456-12.34/12-1234			
CURRENT SITUATION	PLANS AND EXPECTATIONS	SPECIAL QUESTIONS			
1. We characterize our current business situation as good satisfactory poor 2. We characterize our inventories of unsold manufactured goods as too low sufficient too high warehousing not customary 3. Our order backlog (if customary) is a) overall blor export comparatively large sufficient too low we don't export	9. We expect our production activity to increase remain roughly the same decrease no significant domestic production 10. We expect our prices to remain roughly the same fall 11. We expect the scope of our export business to widen remain roughly the same decrease we don't export 12. We expect our workforce to increase remain roughly the same decrease remain roughly the same				
4. Compared to September, the demand situation has improved not changed worsened S. Compared to September, our order backlog has increased remained roughly the same decreased decreased decreased remained roughly the same decreased risen not changed fallen decreased decrease	EXPECTATIONS FOR THE NEXT 6 MONTHS 13. We expect our business situation to become more favorable remain roughly the same become less favorable 14. Predicting how our business will develop is currently easy relatively easy relatively hard hard				

Figure B.1.2: Manufacturing, Quarterly, bi-annual and annual questions, English translation

ifo - Business survey for manufactoring sector ifo Institute - Center for Macroeconomics and Surveys



Please respond by ...

Your current information status ...
Please base responses only on domestic locations, stated sector/product, and disregarding purely seasonal fluctuations.

ID No. 8123456-12.34/12-1234

Sector/product: 123456 Manufacture of Sector designation (if applied)						
SPECIAL QUESTIONS QUARTERLY		ANNUALLY				
JANUARY - APRIL - JULY - OCTOBER	MARCH - JUNE - SEPTEMBER - DECEMBER	MAY				
A) Our order backlogs currently correspond to our average production in month(s) B) Capacity utilization of our facilities is currently at (standard full utilization = 100%) 30 %	A1) We are currently logging overtime yes no If yes, more than usual yes no B1) We currently have short-time work yes no B2) Over the next 3 months, we expect to have short-time work yes no C) In the past 3 months, we have held loan negotiations with banks. yes If yes, the banks were: accommodating normal less accommodating no If no: bank loan not required other reasons	A1) Our company's earnings situation* - measured in terms of the operating result of usual business - a) can be currently characterized as				
☐ lack of raw / input materials ☐ insufficient technical capacity ☐ other factors	ANNUALLY	** Or in the financial year that fell predominantly in the year 2020.				
E) Our competitiveness has, in the past 3 months (compared to the previous 3 months) a) in the domestic market improved	A1) Number of employees In the company overall, we employ (domestic operations only)	B1) Our investments in the past year were (2020 compared to 2019) 2020 + = -				
not changed	people	overall investment				
worsened	A2) Of that number, the following work in	– buildings				
	manufactoring	– equipment				
in foreign markets b) within the EU c) outside the EU	people (or estimate based on sales share)	- software / databases				
improved not changed worsened we don't export		B2) We expect our investments in the current year to be (2021 compared to 2020) 2021 + = -				
<u> </u>		overall investment				
		- buildings				
		- equipment				
		- software / databases				

 $Your \, responses \, will \, be \, handled \, in \, strictest \, confidence. \, Legal \, data \, protection \, is \, fully \, guaranteed. \, Privacy \, policy: \, \underline{https://www.ifo.de/en/Datenschutz-Umfragen}$

Thank you for your input!

io - Business survey for manufactoring sector

ifo Institute – Center for Macroeconomics and Surveys

Please respond by ...



Leibniz-Institut für Wirtschaftsforschung an der Universität München e.V. Postbox 86 04 60 81631 Munich

Your current information status ...

Please base responses only on domestic locations, stated sector/product, and disregarding purely seasonal fluctuations.

Sector/product: 123456 Manufacture of xxx

ID No. 8123456-12.34/12-1234

SPECIAL QUESTION	sector designation (if appli I <mark>S</mark>					
ANNUALLY						
SEPTEMBER		NOVEMBER			DECEMBER	
A1) Our company's earnings situation* - measured in terms of the operating result from usual business - a) can be currently characterized as good satisfactory		A1) Our investments in the cu (2021 compared to 2020) 2021 overall investment - buildings	+	C1) Did you conduct R&D activities in 2019? yes no a) In relation to manufactoring employees, the proportion of R&D employees was:		
poor		– equipment				%
b) has in comparisor improved	to 2021 Q1	– software / databases				b) In relation to manufactoring sales, the proportion of R&D expenditure was:
not changed worsened		A2) We expect our investmen year (2022 compard to 202			%	
		2022	+	=	_	
	d multiple questionnaires for please provide answers to	overall investment				
these special quest	ions relating to the company	– buildings				
as a whole on only	one questionnaire.	– equipment				
A2) Our company's predicted annual surplus after taxes or annual loss as % of net sales in 2021**		– software / databases				
	b) Loss:					

B.2 Services

Figure B.2.1 Services, monthly questionnaire, English translation

ifo - Business survey for service sector ifo Institute - Center for Macroeconomics and Surveys Please respond by	Leibniz-Institut für Wirtschaftsforschung an der Universität München e.V. Postbox 86 04 60 81631 Munich				
Your current information status Please base responses only on domestic locations and disregarding purely seasonal fluctuations. Sector: 1234567 Provision of services xxx	ID No. 19-12345-12345				
1. We characterize our current business situation as	PLANS AND EXPECTATIONS FOR THE NEXT 3 MONTHS 8. We expect our sales** to				
good satisfactory poor	increase remain roughly the same decrease				
2. Our order backlog (if customary for the industry) is comparatively large sufficient too low	9. We expect our workforce to increase remain roughly the same decrease				
REVIEW	10. We expect our prices to				
3. Compared to September, in October our workforce increased remained roughly the same decreased	☐ remain roughly the same ☐ decrease EXPECTATIONS FOR THE NEXT 6 MONTHS				
4. Compared to September, our prices in October have risen not changed fallen	11. We expect our business situation to become more favorable stay the same become less favorable				
5. Compared to September, in October our order backlog increased remained roughly the same decreased 6. In the past 3 months, our business situation improved remained unchanged worsened	12. At the moment, predicting how our business situation will develop is asy relatively easy relatively hard hard				
7a. In the past 3 months, our sales* increased remained the same decreased					
7b. Compared to October 2020, our sales** in October 2021 ☐ increased ☐ remained the same ☐ decreased					
* sales development over the course of three monthsincluding international sales *** including international sales					

Figure B.2.2: Services, Quarterly, bi-annual and annual questions, English translation

ifo - Business survey for service sector ifo Institute - Center for Macroeconomics and Surveys

Please respond by ...

Leibniz-Institut für Wirtschaftsforschung an der Universität München e.V. Postbox 86 04 60 81631 Munich

Your current information status ...

Please base responses only on domestic locations and disregarding purely seasonal fluctuations.

Sector: 1234567 Provision of services xxx

ID No. 19-12345-12345

SPECIAL QUESTIONS								
QUARTERLY		ANNUALLY						
JANUARY - APRIL - JULY - OCTOBER		MAY						
A) Our business activity is curren impeded	tly	A1) Our investments in the past year (2020 vs. 2019) were						
☐ yes		2020	+	=	_			
☐ no if yes, by the following factors:		overall investment						
too few orders / insufficient		– buildings						
☐ lack of skilled workers		– equipment						
☐ lack of low-skilled workers		– software / databases						
 ☐ financing constraints ☐ insufficient technical capacity ☐ lack of space / business equipment 		A2) We expect our investments in the current year (2021 compared to 2020) to						
unfavorable weather condit		2021	+	=	_			
\square other factors		overall investment						
B) Could you currently meet a rise	e in demand with the existing	– buildings						
capacity at your company?		– equipment						
□ yes □ no		software / databases						
%. (please round percentage to w	·	NOVEMBER						
A) In the past 3 months, we have banks.	•	A1) Our investments in the current year (2021 compared to 2020) are						
yes	☐ no If no:	2021	+	=				
If yes, the banks were ☐ accommodating	no need for a bank loan	overall investment						
normal	other reasons	– buildings						
less accommodating		- equipment						
		– software / databases		Ш	Ш			
		A2) We expect our investments in the coming y (2022 compared to 2021) to	/ear					
		2022	+	=	-			
		overall investment						
		– buildings						
		– equipment						
		– software / databases						

B.3 Trade

Figure B.3.1 Trade, monthly questionnaire, English translation

Fig Business survey for retail / wholesale sector ifo Institute - Center for Macroeconomics and Surveys Please respond by	Leibniz-Institut für Wirtschaftsforschung an der Universität München e.V. Postbox 86 04 60 81631 Munich
Your current information status Please base responses only on domestic locations and disregarding purely seasonal fluctuations. Sector: 123456 Retail or wholesale with xxxx	ID No. 6123456-12.34/12-1234
CURRENT SITUATION	EXPECTATIONS FOR THE NEXT 6 MONTHS
1. We characterize our current business situation as good satisfactory poor	9. We expect our business situation to become more favorable remain roughly the same become less favorable 10. Predicting how our business will develop is currently
2. We characterize our inventories as too low sufficient too high warehousing not customary	easy relatively hard hard
REVIEW - TRENDS IN OCTOBER	
3. Compared to October 2020, our sales in October 2021 rose remained the same fell 4. Compared to September, our sales prices have risen not changed fallen	
5. Compared to September, our workforce has increased remained roughly the same decreased	
PLANS AND EXPECTATIONS FOR THE NEXT 3 MONTHS	
6. We expect our sales prices to	
☐ remain unchanged ☐ decrease	
8. We expect our workforce to increase remain roughly the same decrease	

Figure B.3.2: Trade, Quarterly, bi-annual and annual questions, English translation

ifo - Business survey for retail / wholesale sector ifo Institute - Center for Macroeconomics and Surveys

Please respond by ...

Leibniz-Institut für Wirtschaftsforschung an der Universität München e.V. Postbox 86 04 60 81631 Munich

Your current information status ...

Please base responses only on domestic locations and disregarding purely seasonal fluctuations.

Sector: 123456 Retail or wholesale with xxxx

ID No. 6123456-12.34/12-1234

SPECIAL QUESTIONS							
QUARTERLY		ANNUALLY					
JANUARY - APRIL - JULY - OCTOBE	R	FEBRUARY					
A) Our sales activity is currently ☐ yes ☐ no	rimpeded	A1) Number of employees In our operation, we employ (incl. family workers, trainees, temporary staff)					
If yes, by the following factor low demand lack of skilled workers lack of low-skilled workers financial constraints lack of suitable premises / insufficient business equip unfavorable weather cond	commercial spaces ment, vehicles, etc.	approx. people A2) Our total sales* (in euros) for the past financial year were below 0.25 million 5.0 to 12.5 million 12.5 to 25.0 million 25.0 to 1.0 million 25.0 to 50.0 million 50 million 50 million 2.5 to 5.0 million over 1.0 billion over 1.0 billion					
JANUARY - APRIL - JULY - OCTOBE	R - RETAIL ONLY	MAY					
B) In the past quarter, average c	ustomer traffic was	A1) Our investments in the past year were (2020 compared to 2019)					
a) at local location	b) online	2020	+	=	_		
☐ high☐ normal for the season	☐ high ☐ normal for the season	overall investment					
☐ low	□ low	– buildings					
no local location	ono online presence	– equipment					
MARCH - JUNE - SEPTEMBER - DE	CEMBER	– software / databases					
A) In the past 3 months, we have banks.		A2) We expect our investments in the current year (2021 compared to 2020) to be					
□ yes	☐ no	overall investment	·		П		
If yes:	If no:	- buildings			H		
The banks were:	no need for a bank	– equipment					
□ accommodating loan other reasons less accommodating loan lo	- software / databases						

• Business survey for retail / wholesale sector

ifo Institute - Center for Macroeconomics and Surveys

Please respond by ...

Leibniz-Institut für Wirtschaftsforschung an der Universität München e.V. Postbox 86 04 60 81631 Munich

ID No. 6123456-12.34/12-1234

Your current information status ...

Please base responses only on domestic locations and disregarding purely seasonal fluctuations.

Sector: 123456 Retail or wholesale with xxxx

SPECIAL QUESTIONS			
ANNUALLY			
NOVEMBER			
A1) Our investments in the current year (2021 compared to 2020) are			
2021	+	=	-
overall investment			
– buildings			
– equipment			
– software / databases			
A2) We expect our investments in the comir (2022 compared to 2021) to be	ng year		
2022	+	=	-
overall investment			
– buildings			
– equipment			
– software / databases			

B.4 Construction

Figure B.4.1 Construction, monthly questionnaire, English translation

Flease base responses only on domestic locations and disregarding purely seasonal fluctuations. Please fill in only the columns that apply to your work area.

KU-Bau
ifo Institute
Leibniz Institute for Economic Research at
the University of Munich
Center for Macroeconomics and Surveys
Postbox 86 04 60
81631 Munich

ID No. 1123456-123.12.1234

Your current information status

	Road construction	Other underground construction	Public buildings	Commercial buildings	Total residential construcation		al buildings th at least 3 dwellings		
_	CURRENT S	ITUATION							
	1. We charact	erize our current	business situ	ation as					
							good satisfactory poor		
	2. Our order l	oacklog (if custor	mary for the in	dustry) is					
							comperatively large sufficient too low		
3. Our order backlogs currently correspond to our average production in:									
							month(s)		
	4. Our prices								
							more than cover our costs cover our costs no longer cover our costs		
		ucation activity		peded					
							yes no		
	If yes, by the	ne following facto	ors:						
							too few orders order cancellations lack of skilled workers lack of low-skilled workers financial constraints scarcity of materials / insufficient technical equipment unfavorible weather conditions other factors		
	REVIEW								
	6. Our constr	uction activity in	the past 3 mo	onths has					
							increased stayed about the same decreased		
	7. Compared	to September, oı	ur level of buil	ding contracts	in October				
							increased remained roughly the same decreased		
		to September, ou	· _	_		_			
							risen not changed fallen		
		l be handled in stricte w.ifo.de/en/Datensch		al data protection i	s fully guaranteed.		Please turn over!		

Road construction	Other underground construction	Public buildings	Commercial buildings	Total resident construcation			l buildings at least 3 dwellings	
PLANS AND	EXPECTATIONS	FOR THE NEX	T 3 MONTHS					
9. We expect o	our construction	activity to						
							increase remain roughly the same decrease	
10. We expect o	our prices to						£	
							increase remain roughly the same decrease	
EXPECTATIO	NS FOR THE NE	XT 6 MONTHS	5					
11. We expect o	our business situ	ation to						
							become more favorable stay the same become less favorable	
12. Predicting	how our busines	s situation wil	l develop is cu	rrently				
							easy relatively easy relatively hard hard	
CAPACITY U	FILIZATION				ЕМР	LOYEES		
13. Utilization of our machine capacity is currently at (standard full utilization = 100%)					14. In t	he next 3 r	months, we expect our workforce	to
30 40 50 6	0 70 75 80 85	90 95 100 m	ore than 100%,	namely:	a) in t	otal	b) skilled tradespeople	c) office empl.
			all	equipment			t the same	
				uipment for dgr. constr.		decrease	-	
				uipment buildings	a) in t		September, in October our workfo b) skilled tradespeople	c) office empl.
						increased		
							out the same	

Figure B.4.2: Construction, Quarterly, bi-annual and annual questions, English translation

ifo - Business survey for construction sector ifo Institute - Center for Macroeconomics and Surveys Please respond by	Leibniz Institute for Economic Research at the University of Munich				
Please base responses only on domestic locations and disregarding purely see Please fill in only the columns that apply to your work area.	asonal fluctuations.				
KU-Bau ifo Institute Leibniz Institute for Economic Research at the University of Munich Center for Macroeconomics and Surveys Postbox 86 04 60 81631 Munich	ID No. 1123456-123.12.1234 Your current information status				
Road Other underground Public Commercial Total reside construction construction buildings buildings construcat					
SPECIAL QUESTIONS					
QUARTERLY	ANNUALY				
MARCH - JUNE - SEPTEMBER - DECEMBER	AUGUST				
A) In the past 3 months, we have held loan negotiations with banks. yes no If yes: If no: no need for a bank loan accommodating other reasons less accommodating HALF-YEARLY	A) We had job vacancies in the past 6 months: yes no If yes: a) We were looking for specialists in the following fields: skilled trades commercial professions industrial managers civil engineering apprentice tradespeople				
APRIL - SEPTEMBER	DECEMBER				
A) Did you have any problems in the last 6 months? yes no If yes, the following: order cancellations customers defaulting on payment poaching of employees	A) As a basis for weighting your responses in 2022, we would ask you to indicate how the sales you have generated so far in 2021 are distributed among the following sectors. (estimates are fine) Road Other undgr. Public buil- Commercial Residentia construction constr.				
☐ violation of VOB regulations	construction construction unigo buildings				
<pre>including:</pre> ☐ customer put up hurdles to construction	% % % % %				
☐ delayed acceptance of work by the customer contracts☐ awarded to lowest bidder, not the most commercially viable	100 %				
awarded to lowest bidder, not the most commercially viable	B) On average, our workforce in 2021 totaled: workers				
ANNUALLY	employees total				
JULY					
A1) For equipment-intensive work, we sometimes rent equipment and/or we hire specialist companies as subcontractors .					

A2) Approx. _____% of our equipment capacity in 2020 was attributable to **rented equipment**.