

Leiss, Felix; Sauer, Stefan; Wohlrabe, Klaus

Working Paper

Questions, Measures, and Meaning: Interpreting Indicators from the ifo Business Survey

CESifo Working Paper, No. 12094

Provided in Cooperation with:

Ifo Institute – Leibniz Institute for Economic Research at the University of Munich

Suggested Citation: Leiss, Felix; Sauer, Stefan; Wohlrabe, Klaus (2025) : Questions, Measures, and Meaning: Interpreting Indicators from the ifo Business Survey, CESifo Working Paper, No. 12094, Munich Society for the Promotion of Economic Research - CESifo GmbH, Munich

This Version is available at:

<https://hdl.handle.net/10419/327704>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Working Papers

Questions, Measures, and Meaning: Interpreting Indicators from the ifo Business Survey

Felix Leiss, Stefan Sauer, Klaus Wohlrabe

Imprint:

CESifo Working Papers

ISSN 2364-1428 (digital)

Publisher and distributor: Munich Society for the Promotion
of Economic Research - CESifo GmbH

Poschingerstr. 5, 81679 Munich, Germany
Telephone +49 (0)89 2180-2740

Email office@cesifo.de
<https://www.cesifo.org>

Editor: Clemens Fuest

An electronic version of the paper may be downloaded free of charge

- from the CESifo website: www.ifo.de/en/cesifo/publications/cesifo-working-papers
- from the SSRN website: www.ssrn.com/index.cfm/en/cesifo/
- from the RePEc website: <https://ideas.repec.org/s/ces/ceswps.html>

Questions, Measures, and Meaning: Interpreting Indicators from the ifo Business Survey*

Felix Leiss

Stefan Sauer

Klaus Wohlrabe

This version: August 26, 2025

Abstract

In addition to the well-known ifo Business Climate Index for Germany, the ifo Business Survey generates a wide range of further indicators based on monthly responses from around 9,000 companies across all major sectors. These indicators capture current business conditions, expectations, constraints, and sector-specific developments, and many have proven to be valuable leading signals for macroeconomic analysis. This paper provides a systematic guide to interpreting these indicators. We explain the main types of survey questions, outline the methods used to transform responses into economically meaningful measures, and highlight key aspects to consider when interpreting results. Practical examples illustrate how the indicators can be applied in economic analysis, policy advice, and business decision-making.

Keywords: ifo Business Survey, Business Climate, economic indicators, interpretation guide.

JEL-Classification: C01, C82, C83, O11.

***Leiss:** ifo Institute Munich (leiss@ifo.de, +49 89/9224-1358). **Sauer:** ifo Institute Munich (sauer@ifo.de, +49 89/9224-1302). **Wohlrabe:** ifo Institute Munich and CESifo (wohlrabe@ifo.de, +49 89/9224-1229); corresponding author.

1 Introduction

The ifo Business Climate Index for Germany is one of the most prominent and widely monitored leading indicators of economic activity in the country (Sauer and Wohlrabe, 2018). Published each month, it attracts substantial public attention – not least because changes in the index can have an immediate impact on financial markets (Mittnik et al., 2013; Kersefischer and Schmeling, 2024). Yet, the business climate represents only a fraction of the information gathered through the ifo Business Survey.

Each month, approximately 9,000 companies across manufacturing, services, trade, and construction provide qualitative and quantitative assessments of their current situation, recent developments, and expectations. This rich and long-standing data source yields a broad set of additional indicators, many of which have demonstrated strong predictive power for key macroeconomic variables such as GDP growth, investment, or employment (Lehmann, 2023). These indicators not only capture the overall economic situation, but also allow for granular analyses by sector, region, or firm size (Lehmann et al., 2019; Borger and Sauer, 2019; Sauer and Wohlrabe, 2022a).

The aim of this article is to provide a systematic and practice-oriented guide to interpreting these indicators. Beyond presenting the conceptual underpinnings, we describe the different types of survey questions and the transformation of raw responses into economically meaningful measures. Building on this, we offer general guidelines for interpretation and highlight selected examples that illustrate their relevance in economic analysis, policy advice, and business decision-making. In doing so, the article seeks to bridge the gap between methodological documentation and practical application, enabling both experts and non-specialists to make more informed use of the ifo survey results.

2 Background Information on the ifo Business Survey

Each month, approximately 9,000 companies in Germany participate in the ifo Business Survey, providing information on their current business situation, recent operational developments, and expectations or plans for the coming months (Demmelhuber et al., 2022). The panel covers the manufacturing, services, trade, and construction sectors, and offers a highly representative picture of the structure of the German economy across sectors, industries, and regions. In terms of company size, large firms are slightly overrepresented (Hiersemenzel et al., 2022). The questionnaires are predominantly completed by members of company lead-

ership, such as owners, board members, or managing directors (Sauer and Wohlrabe, 2019; Hennrich et al., 2023).

Responses are aggregated into time series data through a multi-step process. At the sector level, the shares of each response category are first calculated for qualitative questions, while mean values are used for quantitative questions. Larger companies receive greater weight in the aggregation, reflecting their economic importance. These sector-specific results are then combined into broader sector aggregates and, ultimately, into macroeconomic indicators. At these higher levels, weights are assigned according to each sector’s share in gross value added, ensuring that industries contributing more to overall economic output receive proportionally greater influence in the results.

To reveal underlying economic trends, the resulting time series are seasonally adjusted. This step removes regularly recurring patterns – such as Christmas-related sales peaks or weather-induced fluctuations in construction – that could otherwise obscure genuine economic developments. The ifo Institute applies the X-13ARIMA-SEATS procedure, an internationally recognized standard for seasonal adjustment (Sauer and Wohlrabe, 2015). Detailed documentation on the weighting procedures at the company, industry, and sector levels is provided in Sauer et al. (2023).

This survey design and aggregation framework underpin all indicators derived from the ifo Business Survey and shape how the results should be interpreted – an aspect discussed in detail in the following section on question types and aggregation.

3 Different Question Types: Contexts and Aggregation

Building on the survey design and aggregation framework described above, the ifo Business Survey employs a variety of question formats to capture companies’ assessments of their current situation and expected developments as accurately and comprehensively as possible. Depending on the objective and content, response formats range from simple yes/no answers to multi-point ordinal scales and continuous numerical ratings. This diversity necessitates specific methods of processing, analysis, and aggregation.

The following section presents the main types of questions used in the survey and explains how responses are transformed into economically interpretable indicators. Wherever possible, question formats are harmonized across sectors to enable consistent and comparable analyses of the overall economy (Link, 2020). A complete overview of all regularly surveyed questions, their classification, and the sectors in which they are applied is provided in Table A1 in the

Appendix. The full questionnaires with the exact wording of all items are reproduced in Demmelhuber et al. (2022). Open-ended questions with free-text input are used exclusively for research purposes and are therefore not covered in this guide.

3.1 Ordinal Scale (Three- or Four-point Scale)

A large share of the ifo Business Survey is based on ordinal response scales, most commonly a three-point scale. Companies evaluate either the current level of a variable (e.g., business situation: *good, satisfactory, poor*) or changes over time (e.g., demand: *increased, unchanged, decreased*). In some cases, the scale is extended by an additional response option such as “not relevant” – for example, in questions on export activity (“We do not export”).

Responses on these scales are summarized using a *balance score*, defined as the share of positive responses (e.g., *good* or *increased*) minus the share of negative responses (e.g., *poor* or *decreased*). Neutral responses are excluded from this calculation. The resulting balance ranges from -100 to $+100$, where positive values indicate a predominance of favourable assessments and negative values reflect a predominance of critical assessments. The zero line represents an equal share of positive and negative responses. Because the same balance can result from different underlying distributions of answers, it is advisable to also examine the raw response shares for a more nuanced understanding.

For questions on changes – such as production activity or demand – the balance score reflects the *direction* rather than the *magnitude* of developments. A positive value indicates that improvements were reported more frequently than deteriorations. Increases within the positive range suggest a broadening improvement, whereas declines deeper into negative territory point to worsening conditions. Crossing from negative to positive territory can be interpreted as a potential turning point in sentiment.

A special case is the four-point scale used to measure *economic uncertainty*. Companies respond to the question: “Predicting your business situation for the next six months is...” with the options *easy, rather easy, rather difficult, or difficult*. From these responses, a continuous uncertainty indicator U is computed as:

$$U = 0 \cdot \text{Share}(\text{easy}) + \frac{1}{3} \cdot \text{Share}(\text{rather easy}) + \frac{2}{3} \cdot \text{Share}(\text{rather difficult}) + 1 \cdot \text{Share}(\text{difficult})$$

The indicator ranges from 0 (complete predictability) to 100 (maximum uncertainty). A value of 50 corresponds to a moderate level of uncertainty. Comparing current readings with the long-term average is useful for putting results into context (Lautenbacher et al., 2021).

3.2 Nominal Scale (Yes/No Questions)

In addition to ordinal scales, the ifo Business Survey also employs simple yes/no questions to capture clearly defined factual information that does not require subjective evaluation by respondents. Typical examples include whether a company is currently facing constraints to its business activities or whether credit negotiations took place in the previous three months. Results are evaluated as the share of affirmative responses among all valid entries, excluding non-responses. For example, if 60% of participating firms report current business constraints, this indicates that a majority are affected by internal or external obstacles. However, such measures reflect only the proportion of affected companies; they do not convey the severity of the impact or the number of employees involved.

To enhance the analytical value of these indicators, yes/no questions can be supplemented by additional quantitative items. During the COVID-19 pandemic, for instance, the question on short-time work was followed by an item on the share of employees affected. This combination allowed for reliable estimates of the short-time work rate that were available even before the release of official statistics on the topic (Link and Sauer, 2020a). Such extensions considerably increase the informational depth of nominal indicators.

3.3 Close-ended Questions (Single or Multiple Choice)

Following certain yes/no questions, the ifo Business Survey uses close-ended questions with multiple response options to collect more detailed contextual information. For instance, firms reporting business constraints are asked to select from a predefined list of possible obstacles – such as shortages of skilled labour, material bottlenecks, financing difficulties, or insufficient demand.

Because respondents can choose more than one option, the percentages for individual factors do not sum to 100%. For each listed factor, the reported share indicates the proportion of all firms that answered the preceding question, irrespective of whether they selected other options. Interpretation therefore focuses on the relative frequency of specific factors among the affected companies. This approach enables a more nuanced understanding of prevailing challenges and helps distinguish between structural bottlenecks (e.g., in labour or supply chains) and cyclical issues (e.g., insufficient demand).

3.4 Quantitative Questions (Numerical Input)

In addition to qualitative formats, the ifo Business Survey also contains questions requiring respondents to provide specific numerical values. Examples include the percentage of capacity utilization or the length of order backlogs measured in months. Such responses are typically evaluated using the arithmetic mean of all valid entries.

A widely used example is the question: “What is the current capacity utilization of your plants (in percent)?” The resulting averages are often reported by industry or firm size, enabling straightforward economic interpretation. For instance, an average utilization rate of 84% in the manufacturing sector signals a high level of production activity. Changes from month to month provide further insight into operational dynamics. Unlike categorical or scale-based questions, these items yield precise quantitative metrics that can be directly integrated into economic analyses.

3.5 Visual Analogue Scale (VAS)

In addition to categorical and numerical formats, the online version of the ifo Business Survey incorporates questions using a Visual Analogue Scale (VAS). Respondents move a slider along a continuum from 0 to 100 to evaluate variables such as their current business situation or business expectations. The endpoints represent extreme values (0 = very bad, 100 = very good), enabling continuous and nuanced assessments.

Compared to ordinal scales, the VAS allows for finer gradations and thus serves as a particularly sensitive indicator of changes in business sentiment. This is especially valuable in research contexts where a more differentiated assessment is required than with traditional three-point scales. For analytical purposes, the arithmetic mean of all valid responses is calculated. Values above 50 indicate a predominantly positive assessment, while values below 50 point to a more critical judgement. The VAS therefore complements traditional survey formats and is well-suited for capturing subtle shifts in economic uncertainty or overall sentiment (Stangl, 2009).

4 General Interpretation Guidelines

The indicators derived from the ifo Business Survey provide valuable signals on economic developments. However, meaningful interpretation always requires contextual understanding – both in relation to the long-term trajectory of a time series and to sector-specific charac-

teristics. Regardless of the underlying question type, several general considerations should be borne in mind.

First, a single value is rarely meaningful in isolation. Common benchmarks include the long-term average of the respective series and historical extremes, which indicate the typical range of fluctuation. Comparisons with the previous month or the same month in the previous year can help distinguish seasonal patterns from short-term or cyclical changes.

Second, sectoral context matters. Different industries may exhibit distinct response patterns – some tending towards caution, others towards optimism. For example, a balance of +10 may already signal a notable upswing in a traditionally cautious industry, while appearing modest in a sector that is generally more robust.

Third, response behaviour can evolve over time. Firms may adjust their evaluation criteria due to structural shifts within their industry or broader societal changes. Historical averages should therefore not be interpreted as fixed reference points but understood within the context of the relevant time period.

Fourth, it is important to consider the typical cyclical properties of a series. Some indicators follow clear economic cycles, while others are more volatile, showing pronounced fluctuations or frequent changes in direction. For highly volatile series, single monthly values have limited interpretive value; in such cases, emphasis should be placed on underlying trends and possible turning points.

A related rule of thumb is the “three times rule”, which treats a movement as a potential trend reversal only if it persists for three consecutive months. While useful as a rough guide, it should be applied with caution: even three successive increases of just 0.1 balance points may be statistically and economically insignificant. The significance of any change depends on its magnitude, the volatility of the series, and the broader economic environment.

Finally, it should be remembered that the ifo indicators reflect subjective company assessments rather than objective economic statistics. Their strength lies in the early detection of sentiment shifts, uncertainties, and expectations – factors that often precede actual economic developments. To avoid misinterpretations, the exact wording of the survey questions should always be considered when drawing conclusions.

5 Indexing of Time Series

The business climate is not surveyed directly; instead, it is computed as the geometric average of two components: the assessment of the current business situation and business expectations

for the next six months. As its name suggests, the ifo Business Climate Index is published in index form, which requires converting the original balance values into a scale with a fixed base year. Currently, the year 2015 serves as the base: the average value of the series for that year is set to 100, and all other monthly values are scaled relative to this benchmark. Values above 100 indicate a more favourable business climate than in 2015, while values below 100 indicate a less favourable climate.

Indexing is widely used in the communication of economic data – for example, by the Federal Statistical Office and in many international indicators. The main advantage lies in improved comparability: index values are dimensionless, consistently scaled, and easy to present graphically. Multiple subcomponents – such as the current situation and expectations within the ifo Business Climate Index – can thus be displayed in a single chart without requiring a shared unit of measurement.

However, indexing also introduces limitations. Using a fixed base year can obscure the actual level of the underlying series, especially when several time series are shown together. Differences in baseline values for the reference year can lead to misleading comparisons – for instance, the business situation index may lie consistently above the expectations index even if the corresponding balance is actually lower, simply because situation assessments were higher in the base year. Moreover, the choice of base year – whether a boom or a crisis year – can distort the overall picture. Finally, indexing removes the original unit of measurement (points on the -100 to $+100$ balance scale), making it harder to gauge absolute levels.

Despite these limitations, index representation remains a practical and effective way to illustrate trends over time. The underlying trajectory – slopes, turning points, or shifts in trend – remains unaffected; only the reference point changes. As such, indices offer a clear visual representation of developments, while interpreting absolute levels requires additional context and background knowledge.

6 Selected Examples

The preceding sections outlined the main question types of the ifo Business Survey and the indicators derived from them. This section illustrates their application using selected practical examples, each highlighting specific aspects of economic interpretation.

6.1 Business Climate, Business Situation, and Business Expectations

The ifo Business Climate Index is the most prominent leading indicator of economic activity derived from the ifo Business Survey. It combines two components: companies' assessment of the current business situation (rated as *good*, *satisfactory*, or *bad*) and their expectations for the next six months (more favourable, unchanged, or less favourable). For both questions, the balance of positive minus negative responses is calculated and then indexed to the base year 2015, with an index value of 100 representing the 2015 average.

The business climate is computed as the geometric mean of the indices for the current business situation and business expectations. It therefore reflects not only assessments of present conditions but also equally weighted expectations for the near future. This combined measure provides a comprehensive picture of business sentiment in the German economy. Detailed analyses of the determinants of responses to these two core questions can be found in Freuding et al. (2021), Sauer and Wohlrabe (2024b), and Sauer and Wohlrabe (2025).

Figure 1: ifo Business Climate Germany

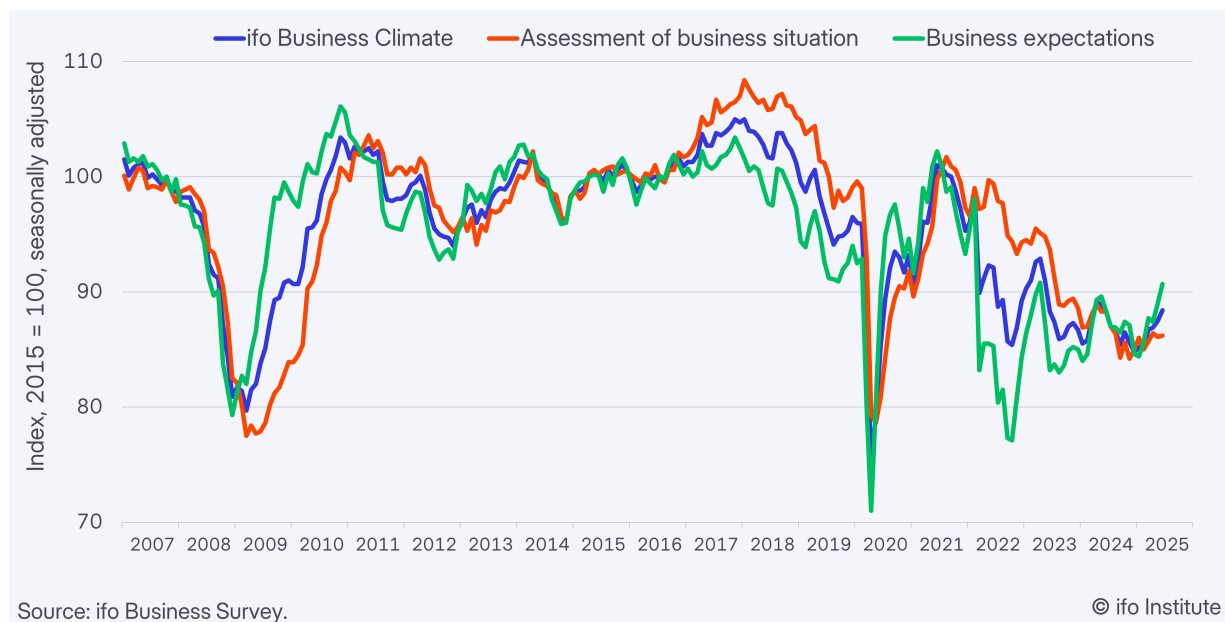


Figure 1 shows the development of the ifo Business Climate Index from 2021 onwards, reflecting major economic events of recent years. For most of the period, the index remained below 100, signalling sentiment weaker than the 2015 average. After a brief post-pandemic recovery, it fell sharply in spring 2022 following the outbreak of the war in Ukraine. While

assessments of the current situation initially showed no clear trend, expectations deteriorated markedly, dragging down the overall index.

Sentiment then stabilised at a lower level – around 15 points below its February 2022 value – but only temporarily. The economic concerns expressed by firms soon materialised, as sanctions halted several trade flows and intensified the material shortages that had emerged during the COVID-19 pandemic. Russia and Ukraine, previously key suppliers of energy and raw materials, could no longer fulfil their roles, contributing to inflation at levels unseen in decades. This affected not only energy prices but also a wide range of goods.

In July 2022, the European Central Bank (ECB) responded by raising interest rates by 50 basis points, ending the long-standing zero interest rate era. Over the next 14 months, nine further hikes followed. In autumn 2022, fears of a winter gas shortage intensified but ultimately proved unfounded. Nevertheless, the combination of higher interest rates and persistent uncertainty dampened demand, especially in manufacturing. At the same time, soaring construction loan rates and rising building material costs abruptly ended the long-running boom in building construction.

From the third quarter of 2022 onwards, the business situation in Germany steadily worsened, reaching a low point in November 2024. However, in the calculation of the Business Climate Index, periods of decline in the current situation were at times more than offset by a recovery in expectations – albeit from a low base. For example, in the fourth quarter of 2022, the overall index improved despite a slight deterioration in the actual business situation reported by firms.

When viewed in a longer-term perspective, the post-2021 trajectory mirrors earlier crisis patterns, such as the 2008/09 financial crisis, where expectations typically react more sharply and earlier than current assessments. This underlines the leading-indicator character of the index: turning points in expectations often foreshadow shifts in actual economic activity. Furthermore, the persistence of sub-100 values over an extended period signals a structural phase of subdued sentiment, which historically has often coincided with below-potential growth in Germany.

6.2 The ifo Business Uncertainty

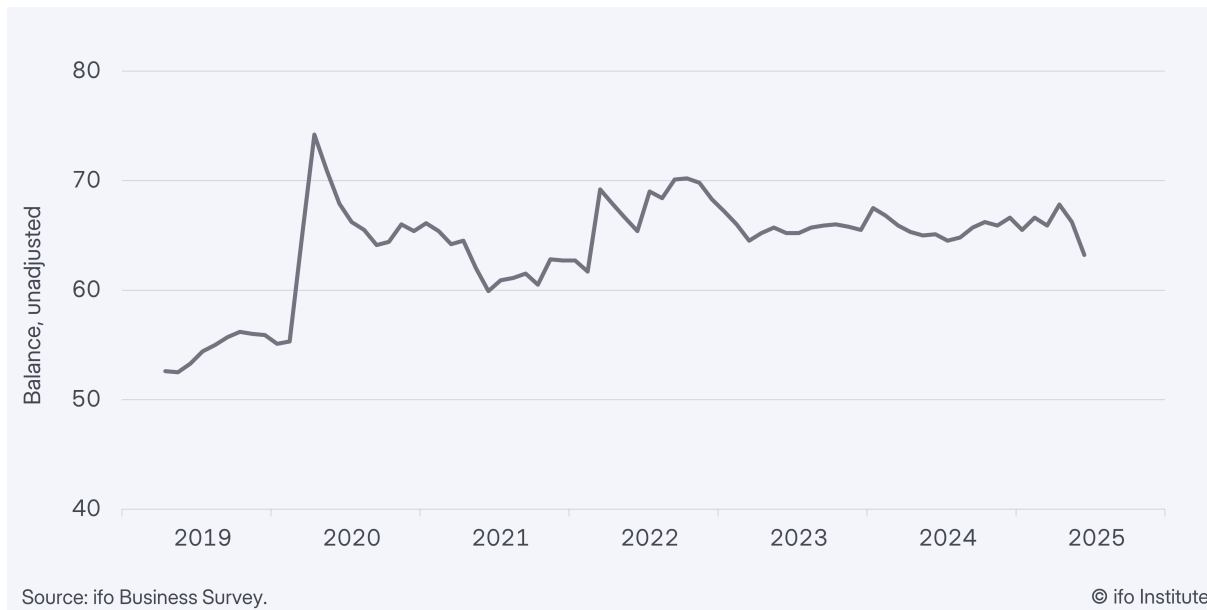
Figure 2 shows the development of the ifo Business Uncertainty since its introduction in 2019. The indicator measures the degree of uncertainty perceived by firms regarding their future business development and is expressed on a scale from 0 (no uncertainty) to 100 (maximum uncertainty). A value of 50 represents a medium level of uncertainty.

The series reveals a prolonged phase of elevated uncertainty in the German economy. Sharp increases were recorded during the COVID-19 pandemic in 2020 and again in spring 2022 with the outbreak of the war in Ukraine. In both cases, uncertainty surged rapidly, reflecting abrupt and profound shocks to global economic activity. Unlike after previous, shorter-lived disruptions, uncertainty has not returned to pre-crisis levels; instead, it has remained persistently above the medium threshold of 50 since the series began.

While the past two years have shown comparatively smaller month-to-month movements, the sustained high level is economically significant. Elevated uncertainty can lead households to postpone major purchases and encourage firms to delay or scale back investment and hiring, thereby dampening aggregate demand (Lautenbacher et al., 2021). In addition, prolonged uncertainty may shift corporate strategies towards greater risk aversion, favouring shorter planning horizons and more liquid asset holdings.

From an analytical perspective, the indicator often spikes in response to sudden geopolitical or economic shocks and can act as a coincident or slightly leading signal for downturns in sentiment-based indicators, such as the ifo Business Climate. However, as the time series is available only since 2019, it remains to be seen how it behaves over the full course of a business cycle and whether the current elevated levels represent a structural shift or merely an extended aftermath of recent crises.

Figure 2: ifo Business Uncertainty for the Overall Economy



6.3 The ifo Inventory Indicator

Figure 3 shows the inventory indicator for the manufacturing sector, which monitors the level of unsold goods. Firms can classify their inventories as *too small*, *normal*, or *too large*; a fourth option allows them to state that they do not typically hold inventories. The balance is calculated differently from standard three-point ordinal scales: (1) only firms that hold inventories are included, and (2) the categories *too small* and *too large* are not inherently positive or negative. Accordingly, the balance is defined as the share of *too large* responses minus the share of *too small* responses. Positive values indicate excess inventories, while negative values point to shortages or delivery problems.

From a cyclical perspective, inventories in manufacturing typically increase during downturns, as production exceeds demand and unsold goods accumulate. Conversely, negative balances – indicating shortages – are relatively rare and usually occur in phases of unexpectedly strong demand or severe supply chain disruptions. During the COVID-19 pandemic and the subsequent period of global supply bottlenecks, for example, the indicator temporarily moved into strongly negative territory, reflecting delivery delays and difficulties in replenishing stocks.

The ifo inventory indicator has also proven to be a reliable predictor of subsequent revisions to inventory changes in the national accounts (Wollmershäuser, 2016). Similar questions are asked monthly in the retail sector, where they also provide valuable economic signals. In this context, high positive balances often point to weak demand, seasonal overstocking, or misjudged sales forecasts (Rumschmidt, 2017; Sauer and Seiler, 2014). As with other sentiment-based indicators, interpretation benefits from placing current values in relation to long-term averages and historical extremes, as well as from considering sector-specific seasonal patterns.

Figure 3: ifo Inventory Indicator in Manufacturing



6.4 The ifo Capacity Utilization

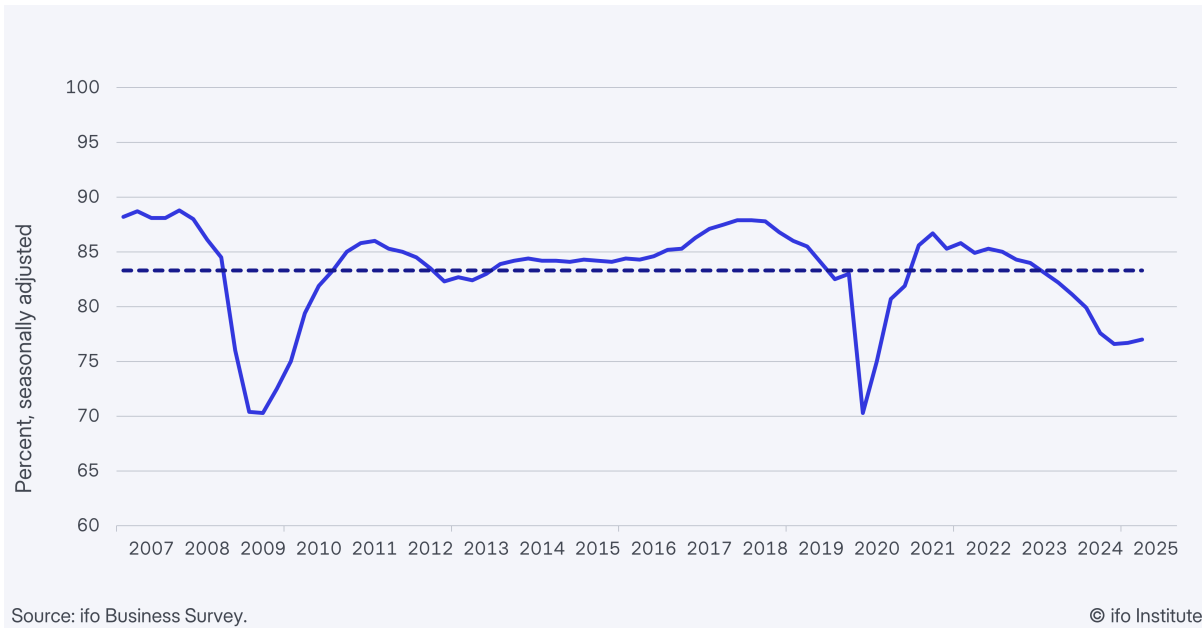
Overall economic capacity utilization is a key indicator in economic analysis, reflecting the degree to which an economy's production facilities are in use. Persistent overutilization can signal an increasing need for investment, while sustained underutilization may indicate structural weaknesses or cyclical downturns (Wohlrabe and Wollmershäuser, 2017). As official statistics for Germany do not directly capture this measure, the ifo capacity utilization rate represents a crucial data source. In addition to national figures, the ifo Institute also compiles regional utilization rates for the federal states, which correlate strongly with regional output gaps estimated using advanced time series methods (Lehmann et al., 2022).

Figure 4 presents the seasonally adjusted capacity utilization in the manufacturing sector, illustrating economic cycles – both upturns and downturns – since German reunification. Assessments of over- or underutilization are based on deviations from the long-term average, currently 83.3% (also marked in Figure 4). Values above this threshold indicate overutilization, while those below suggest underutilization.

From a cyclical perspective, utilization typically rises in economic expansions as firms increase output to meet growing demand, and falls during recessions when orders decline. Temporary peaks above the long-term average can signal emerging capacity constraints, which in turn may trigger investment activity or lead to delivery delays. Conversely, prolonged periods

of low utilization often coincide with weak investment demand and cost-cutting measures. As with other indicators, interpretation benefits from comparing current readings with historical extremes and sector-specific patterns, as well as from assessing whether changes are broad-based across industries or concentrated in specific subsectors.

Figure 4: Capacity Utilization in Manufacturing



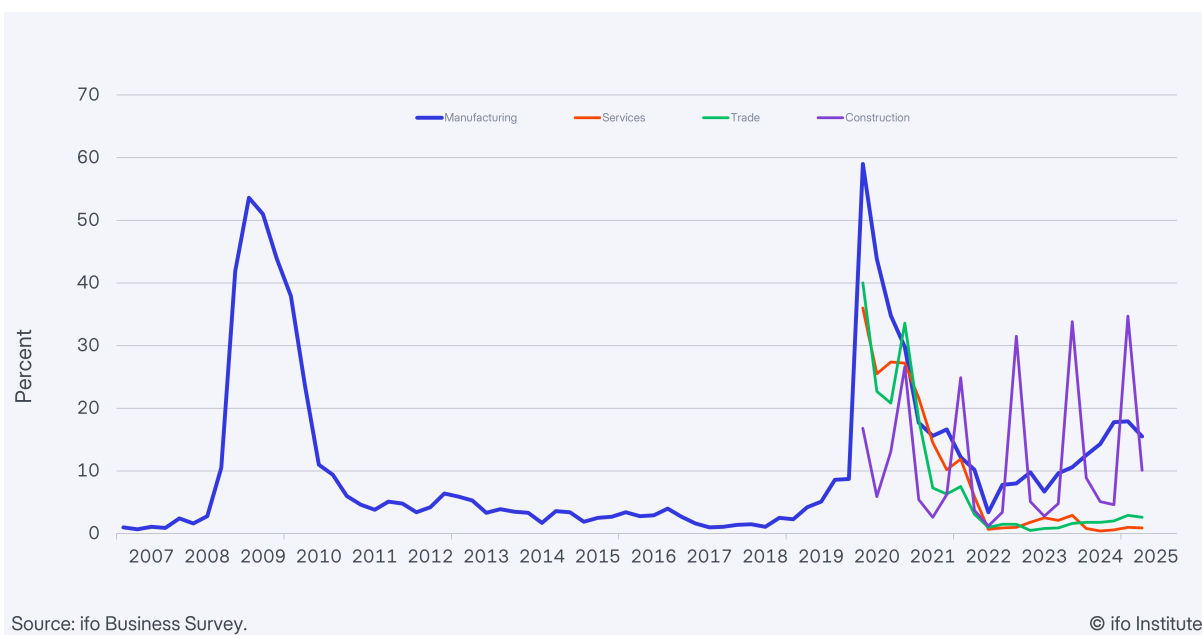
6.5 Short-time Work

Each quarter, companies in all sectors are asked whether they are currently using short-time work and whether they plan to do so within the next three months. While these questions have been part of the manufacturing survey since 1991, they were only introduced in other sectors in 2020. Figure 5 shows the share of companies using short-time work by sector. The data reveal pronounced seasonal fluctuations in the construction industry, where seasonal adjustment remains of limited value due to the relatively short time series. Short-time work is generally used far less in the services and trade sectors compared to manufacturing, with the exception of the COVID-19 lockdowns, when its use surged across all sectors as firms sought to retain employees.

The survey results do not capture the exact proportion of employees on short-time work. Estimating this rate requires additional quantitative questions, which were included during the pandemic to produce early estimates ahead of official statistics (Link and Sauer, 2020b).

From a business cycle perspective, short-time work tends to rise sharply during recessions or crisis periods, providing firms with a flexible adjustment mechanism that avoids immediate layoffs. Declines in its use typically signal an improving economic outlook, while persistently high levels can indicate protracted weakness. Interpreting these indicators also requires consideration of the broader economic and policy environment. For example, regulatory changes, extended deadlines, or temporary subsidies – as seen during the pandemic – can significantly affect the reported shares. Cross-referencing these data with other indicators, such as the Ifo Employment Barometer, helps identify whether changes in short-time work reflect cyclical shifts, structural adjustments, or policy-driven effects. A low share of short-time work generally points to a robust labour market, whereas prolonged reliance on the measure may signal deeper economic challenges ahead.

Figure 5: Share of Firms with Short-time Work by Sector



6.6 Business Constraints

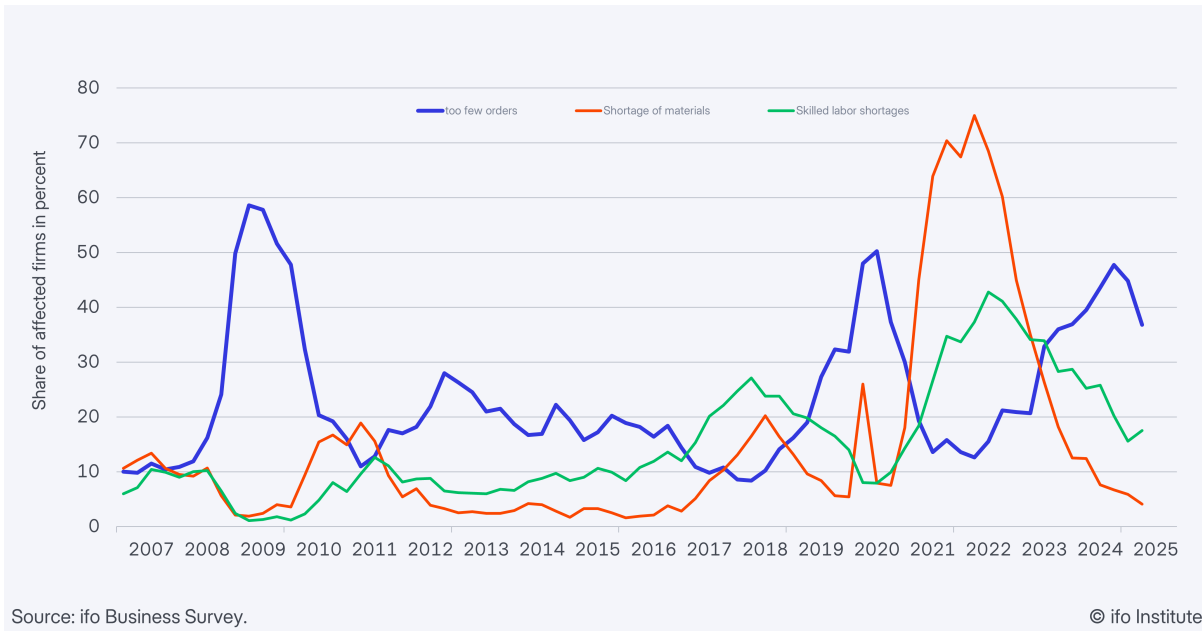
Firms reporting current production, business, sales, or construction constraints are asked in a follow-up question to specify the causes. These may include demand-side factors (e.g., too few orders), supply-side bottlenecks (e.g., shortages of materials, labour, capacity, or financing), or other factors such as adverse weather conditions (Sauer and Wollmershäuser, 2023).

When interpreting these data, it is important to compare the share of affected firms with recent values, long-term averages, and historical peaks. Figure 6 illustrates this for the manufacturing sector, focusing on order shortages, skilled labour shortages, and material bottlenecks. High shares of order shortages are typically observed during economic downturns and crises, but often remain above 10% even in periods of solid growth. By contrast, material shortages are considered significant when they exceed 10% – a threshold frequently surpassed during recent disruptions to global supply chains (Leiss and Wohlrabe, 2021; Wohlrabe, 2022; Licht and Wohlrabe, 2024b).

From a cyclical perspective, demand-side constraints such as order shortages tend to rise rapidly in recessions, while supply-side bottlenecks (materials, labour) often intensify in upswings, when capacity limits are reached. Structural factors can shift these patterns over time. The time series for skilled labour shortages, for instance, shows a clear upward trend: whereas the share of affected firms long hovered around 10%, it has recently remained markedly higher – even amid an economic downturn. This persistence points to deep-seated causes, most notably demographic change (Garnitz et al., 2023; Peichl et al., 2022, 2025), but also sector-specific skill mismatches and slower labour market adjustment.

Analysts should therefore interpret changes in business constraints not in isolation, but in conjunction with other indicators, such as capacity utilisation or price expectations. In particular, simultaneous increases in demand constraints and supply bottlenecks can signal stagflationary pressures, whereas a decline in both typically reflects a broadly improving business environment.

Figure 6: Production Constraints in Manufacturing



7 Publication and In-depth Analyses of Survey Results

The results of the ifo Business Survey are disseminated through multiple channels, tailored to different audiences. The most prominent format is the monthly press release on the ifo Business Climate Index for Germany, summarising companies' overall assessments of the current economic situation and their expectations for the months ahead. In addition, the ifo Institute regularly issues press releases on other key indicators, such as export expectations, the employment barometer, and industry-specific business climate indices – for example, for the automotive sector, retail, housing construction, or the chemical industry. Price expectations are also reported regularly. These publications are aimed primarily at the media, policymakers, and the general public.

A broader set of results is presented in the *ifo Konjunkturperspektiven*, which regularly report indicators at the industry, sectoral, and regional levels, covering dimensions such as demand trends, production constraints, and employment developments.

More detailed analyses of specific topics appear in the *ifo Schnelldienst*. These articles often focus on individual economic sectors or current economic policy issues, drawing on both established and lesser-known indicators from the survey and placing them in a broader analytical context. Examples include:

- Demmelhuber and Wohlrabe (2020) on the chemical industry,
- Seitz and Wohlrabe (2021) on the advertising industry,
- Leiss and Wohlrabe (2023) on housing construction,
- Schaller and Schasching (2024) on energy-intensive industries,
- Hennrich and Wohlrabe (2024) on wholesale and retail trade in the food industry.

Beyond traditional sector classifications, the ifo Institute also develops indicators for cross-cutting industries, such as the digital economy (Pols et al., 2019) or the events industry (Sauer and Wohlrabe, 2022b; Licht et al., 2023). The potential for regional analysis of the survey at the federal state level is examined in detail by Lehmann et al. (2019) and Lehmann et al. (2024a,b), among others.

Other examples of indicators derived from the ifo Business Survey include:

- Threat to economic survival (Licht and Wohlrabe, 2023),
- Credit Constraint Indicator (Marjenko et al., 2019),
- Competitiveness of manufacturing firms (Sauer and Wohlrabe, 2024a),
- Investment plans (Wollmershäuser, 2018),
- Working from home (Alipour et al., 2021).

Finally, survey results are also distributed through major economic data providers – such as Bloomberg and Refinitiv (formerly Thomson Reuters) – as well as via industry associations, government ministries, and international organisations. Many indicators are therefore accessible to professional market participants, even if they receive only limited attention from the wider public.

The ifo micro data are not only an essential basis for economic forecasting and business cycle analysis, but also play an important role in academic research using both time series and micro data, including Bachmann et al. (2013); Bachmann and Elstner (2015); Bachmann et al. (2019); Buchheim et al. (2022); Enders et al. (2022); Dovern et al. (2023); Link et al. (2023); Link (2024); Licht and Wohlrabe (2024a); Menkhoff (2025); Lehmann and Wikman (2025); Hennrich and Wohlrabe (2025).

References

- Alipour, J.-V., Falck, O., Peichl, A., and Sauer, S. (2021). Homeoffice-Potenzial weiterhin nicht ausgeschöpft. *ifo Schnelldienst digital*, 2(6).
- Bachmann, R., Born, B., Elstner, S., and Grimme, C. (2019). Time-varying Business Volatility and the Price Setting of Firms. *Journal of Monetary Economics*, 101:82–99.
- Bachmann, R. and Elstner, S. (2015). Firm Optimism and Pessimism. *European Economic Review*, 79:297–325.
- Bachmann, R., Elstner, S., and Sims, E. R. (2013). Uncertainty and Economic Activity: Evidence from Business Survey Data. *American Economic Journal: Macroeconomics*, 5(2):217–249.
- Borger, K. and Sauer, S. (2019). KfW-ifo-Mittelstandsbarometer: Unterkühlte Stimmung im Mittelstand. *ifo Schnelldienst*, 72(18):49–51.
- Buchheim, L., Dovern, J., Krolage, C., and Link, S. (2022). Sentiment and Firm Behavior during the COVID-19 Pandemic. *Journal of Economic Behavior & Organization*, 195:186–198.
- Demmelhuber, K., Sauer, S., and Wohlrabe, K. (2022). Beyond the Business Climate: Regular and Supplementary Questions in the ifo Business Survey. CESifo Working Paper 9666, CESifo GmbH, Munich.
- Demmelhuber, K. and Wohlrabe, K. (2020). Branchen im Fokus: Chemische Industrie. *ifo Schnelldienst*, 73(02):62–64.
- Dovern, J., Müller, L. S., and Wohlrabe, K. (2023). Local Information and Firm Expectations about Aggregates. *Journal of Monetary Economics*, 138:1–13.
- Enders, Z., Hünnekes, F., and Müller, G. (2022). Firm Expectations and Economic Activity. *Journal of the European Economic Association*, 20(6):2396–2439.
- Freuding, J., Seitz, R., and Wohlrabe, K. (2021). Was steckt hinter dem ifo Geschäftsklima? Einschätzungen der Unternehmen zu ihrer aktuellen Lage und Erwartungen. *ifo Schnelldienst*, 74(09):40–45.
- Garnitz, J., Schaller, D., and Sauer, S. (2023). Arbeitskräftemangel belastet die deutsche Wirtschaft. *ifo Schnelldienst*, 76(09):60–64.

- Hennrich, J., Sauer, S., and Wohlrabe, K. (2023). Who Reports the Mood in German Boardrooms? Evidence from the ifo Business Survey. CESifo Working Paper 10571, CESifo GmbH, Munich.
- Hennrich, J. and Wohlrabe, K. (2024). Branchen im Fokus: Groß- und Einzelhandel im Ernährungsgewerbe. *ifo Schnelldienst*, 77(09):69–72.
- Hennrich, J. and Wohlrabe, K. (2025). From 'I don't like Mondays' to 'Friday I'm in love' – Day-of-the-week Effects in Business Surveys. *Applied Economics Letters*, page Forthcoming.
- Hiersemenzel, M., Sauer, S., and Wohlrabe, K. (2022). On the Representativeness of the ifo Business Survey. CESifo Working Paper 9863, CESifo GmbH, Munich.
- Kerssenfischer, M. and Schmeling, M. (2024). What Moves Markets? *Journal of Monetary Economics*, 145:103560.
- Lautenbacher, S., Sauer, S., and Wohlrabe, K. (2021). How Difficult is it for Managers to Predict Their Future Business Development? A New Measure of Perceived Business Uncertainty. *CESifo Forum*, 22(01):40–42.
- Lehmann, R. (2023). The Forecasting Power of the ifo Business Survey. *Journal of Business Cycle Research*, 19:43–94.
- Lehmann, R., Leiss, F., Litsche, S., Sauer, S., Weichselberger, A., and Wohlrabe, K. (2019). Mit den ifo-Umfragen regionale Konjunktur verstehen. *ifo Schnelldienst*, 72(09):45–49.
- Lehmann, R., Sauer, S., Schaller, D., and Wohlrabe, K. (2024a). Ein ifo Geschäftsklima für Hessen. *ifo Schnelldienst*, 77(01):55–60.
- Lehmann, R., Sauer, S., Schaller, D., and Wohlrabe, K. (2024b). Ein ifo Geschäftsklima für Niedersachsen. *ifo Schnelldienst*, 77(02):46–49.
- Lehmann, R., Sauer, S., Wohlrabe, K., and Wollmershäuser, T. (2022). Gesamtwirtschaftliche ifo Kapazitätsauslastungen für die deutschen Bundesländer. *ifo Dresden berichtet*, 2022(3):19–25.
- Lehmann, R. and Wikman, I. (2025). Quarterly GDP Estimates for the German States: New Data for Business Cycle Analyses. *Oxford Bulletin of Economics and Statistics*, 87(4):800–814.

- Leiss, F. and Wohlrabe, K. (2021). Aktuelle Entwicklungen bei Materialengpässen und Lieferproblemen in der deutschen Wirtschaft. *ifo Schnelldienst digital*, 2(19).
- Leiss, F. and Wohlrabe, K. (2023). Zur aktuellen Krisenstimmung im Wohnungsbau. *Wirtschaftsdienst*, 104(07):503–506.
- Licht, T., Sauer, S., and Wohlrabe, K. (2023). Wo steht die Veranstaltungsbranche nach drei schwierigen Jahren? *ifo Schnelldienst*, 76(11):52–54.
- Licht, T. and Wohlrabe, K. (2023). Die deutsche Wirtschaft nach drei herausfordernden Jahren – droht eine Pleitewelle? *ifo Schnelldienst*, 76(12):38–42.
- Licht, T. and Wohlrabe, K. (2024a). AI Adoption Among German Firms. CESifo Working Paper 11459, CESifo GmbH, Munich.
- Licht, T. and Wohlrabe, K. (2024b). Materialengpässe in der Industrie: Ein Blick zurück, Status quo und ein europäischer Vergleich. *ifo Schnelldienst digital*, 77(03):59–62.
- Link, S. (2020). The Harmonization of the ifo Business Survey’s Micro Data. *Journal of Economics and Statistics*, 240(4):543–555.
- Link, S. (2024). The Price and Employment Response of Firms to the Introduction of Minimum Wages. *Journal of Public Economics*, 239:105236.
- Link, S., Peichl, A., Pfäuti, O., Roth, C., and Wohlfart, J. (2023). Attention to the Macroeconomy. CESifo Working Paper 10858, CESifo.
- Link, S. and Sauer, S. (2020a). *Monatlicher Nowcast der realisierten Kurzarbeit auf Basis von Unternehmensbefragungen*. ifo Forschungsberichte 114.
- Link, S. and Sauer, S. (2020b). Umfang der Kurzarbeit steigt in Coronakrise auf historischen Höchststand. *ifo Schnelldienst*, 73(07):63–67.
- Marjenko, A., Sauer, S., and Wohlrabe, K. (2019). Die neue Kredithürde: Hintergründe und Ergebnisse. *ifo Schnelldienst*, 72(18):46–48.
- Menkhoff, M. (2025). The Devil Is in the Tail: Macroeconomic Tail Risk Expectations of Firms . CESifo Working Paper 11848, CESifo GmbH, Munich.
- Mittnik, S., Robinzonov, N., and Wohlrabe, K. (2013). The Micro Dynamics of Macro Announcements. CESifo Working Paper 4421, CESifo GmbH, Munich.

- Peichl, A., Sauer, S., and Klaus, W. (2022). Fachkräftemangel in Deutschland und Europa – Historie, Status quo und was getan werden muss. *ifo Schnelldienst*, 75(10):70–75.
- Peichl, A., Sauer, S., and Klaus, W. (2025). Arbeits- und Fachkräftemangel – aktuelle Lage und Projektionen im europäischen Vergleich. *ifo Schnelldienst*, 78(03):51–57.
- Pols, A., Sauer, S., and Wohlrabe, K. (2019). The Bitkom-ifo Digital Index: A New Indicator for the Economic Development of the Digital Economy in Germany. *CESifo Forum*, 20(03):31–32.
- Rumscheidt, S. (2017). Die ifo Konjunkturumfrage im Großhandel – Frühindikator für die wirtschaftliche Entwicklung der Branche? *ifo Schnelldienst*, 70(11):49–54.
- Sauer, S., Schasching, M., and Wohlrabe, K. (2023). *Handbook of ifo Surveys*. ifo Beiträge zur Wirtschaftsforschung 100.
- Sauer, S. and Seiler, C. (2014). Konjunkturtest im Fokus: Die Beurteilung der Lagerbestände im Handelsgewerbe. *ifo Schnelldienst*, 67(04):41–44.
- Sauer, S. and Wohlrabe, K. (2015). Die Saisonbereinigung im ifo Konjunkturtest - Umstellung auf das X-13ARIMA-SEATS-Verfahren. *ifo Schnelldienst*, 68(01):32–42.
- Sauer, S. and Wohlrabe, K. (2018). The New ifo Business Climate Index for Germany. *CESifo Forum*, 19(2):59–64.
- Sauer, S. and Wohlrabe, K. (2019). CEO or Intern - Who Actually Answers the Questionnaires in the ifo Business Survey? *CESifo Forum*, 20(02):29–31.
- Sauer, S. and Wohlrabe, K. (2022a). Das neue Geschäftsklima für Soloselbständige und Kleinstunternehmen. *ifo Schnelldienst*, 75(01):46–48.
- Sauer, S. and Wohlrabe, K. (2022b). Ein Geschäftsklimaindex für die Veranstaltungswirtschaft. *ifo Schnelldienst*, 75(11):39–43.
- Sauer, S. and Wohlrabe, K. (2024a). Wettbewerbsfähigkeit der deutschen Industrie im freien Fall? Einschätzungen der Unternehmen im europäischen Vergleich. *ifo Schnelldienst digital*, 5(9).
- Sauer, S. and Wohlrabe, K. (2024b). What Is Behind the ifo Business Climate? Evidence from a Meta-Survey. CESifo Working Paper 11482, CESifo GmbH, Munich.

- Sauer, S. and Wohlrabe, K. (2025). Explaining Business Sentiment: Insights from the ifo Business Survey. CESifo Working Paper 12007, CESifo GmbH, Munich.
- Sauer, S. and Wollmershäuser, T. (2023). Angebotsseitige Produktionsbehinderungen und überausgelastete Produktionskapazitäten – eine aktuelle Einordnung für die deutsche Wirtschaft. *ifo Schnelldienst*, 76(03):52–56.
- Schaller, D. and Schasching, M. (2024). Energieintensive Industrie unter Druck. *ifo Schnelldienst*, 77(06):73–77.
- Seitz, R. and Wohlrabe, K. (2021). Branchen im Fokus: Werbebranche. *ifo Schnelldienst*, 74(08):51–52.
- Stangl, A. (2009). *Essays on the Measurement of Economic Expectations*. Munich Dissertations in Economics.
- Wohlrabe, K. (2022). Aktuelle Entwicklungen bei Materialengpässen und Lieferproblemen in der Industrie. *ifo Schnelldienst*, 75(08):35–37.
- Wohlrabe, K. and Wollmershäuser, T. (2017). Zur Konstruktion einer gesamtwirtschaftlichen ifo Kapazitätsauslastung. *ifo Schnelldienst*, 70(15):26–30.
- Wollmershäuser, T. (2016). Vorhersage der Revisionen der Vorratsveränderungen mit Hilfe der ifo Lagerbeurteilung. *ifo Schnelldienst*, 69(07):26–32.
- Wollmershäuser, T. (2018). Die ifo Investitionserwartungen – ein neuer Frühindikator für die Investitionstätigkeit deutscher Unternehmen. *ifo Schnelldienst*, 71(23):32–35.

Appendix

A Overview of all Regularly Surveyed Questions

Table A1: Overview of all Regularly Surveyed Questions

Question / Indicator	Question Type	Frequency	Surveyed Sectors	Result
ifo Business Climate	not directly surveyed	monthly	all sectors	geometric mean ¹
Business situation	ordinal scale (three-point)	monthly	all sectors	balance
Business expectations	ordinal scale (three-point)	monthly	all sectors	balance
ifo Employment Barometer	ordinal scale (three-point)	monthly	all sectors	balance
Employment development previous month	ordinal scale (three-point)	monthly	all sectors	balance
Price expectations	ordinal scale (three-point)	monthly	all sectors	balance
Price development previous month	ordinal scale (three-point)	monthly	all sectors	balance
Business uncertainty	ordinal scale (four-point)	monthly	all sectors	balance
Business situation VAS	Visual Analogue Scale	monthly	all sectors	arithmetic mean
Business expectations VAS	Visual Analogue Scale	monthly	all sectors	arithmetic mean
Uncertainty VAS	Visual Analogue Scale	monthly	all sectors	arithmetic mean
Order backlog assessment	ordinal scale (three-point)	monthly	all sectors	balance
Order backlog development previous month	ordinal scale (three-point)	monthly	manufacturing, services, construction	balance
Order backlog exports	ordinal scale (three-point)	monthly	manufacturing, services, construction	balance
Export expectations	ordinal scale (three-point)	monthly	manufacturing	balance
Demand development previous month	ordinal scale (three-point)	monthly	manufacturing, services, construction	balance
Production development previous month	ordinal scale (three-point)	monthly	manufacturing, services, construction	balance
Production expectations	ordinal scale (three-point)	monthly	manufacturing	balance
Inventories	ordinal scale (three-point)	monthly	manufacturing	balance
Order plans	ordinal scale (three-point)	monthly	manufacturing, trade	balance
Business situation development	ordinal scale (three-point)	monthly	trade	balance
Sales compared to previous year	ordinal scale (three-point)	monthly	services	balance
Sales development last 3 months	ordinal scale (three-point)	monthly	services, trade	balance
Sales expectations	ordinal scale (three-point)	monthly	services	balance
Construction activity development	ordinal scale (three-point)	monthly	services	balance
Construction expectations	ordinal scale (three-point)	monthly	construction	balance
Cost coverage construction prices	ordinal scale (three-point)	monthly	construction	balance
Capacity utilization	ordinal scale (three-point)	monthly	construction	balance
Range of order backlog in months	quantitative	quarterly	manufacturing, services, construction	arithmetic mean
Business constraints	quantitative	quarterly	manufacturing, construction	arithmetic mean
Too few orders / demand	yes/no	quarterly ³	all sectors	Share of yes-answers
Order cancellations	yes/no	quarterly ³	all sectors	Share of yes-answers
General lack of workforce	yes/no	monthly	construction	Share of yes-answers
Shortage of skilled workers	not directly surveyed ²	quarterly ³	all sectors	Share of yes-answers
Shortage of low-skilled workers	yes/no	quarterly ³	all sectors	Share of yes-answers
Financing constraints	yes/no	quarterly ³	all sectors	Share of yes-answers
Material shortages	yes/no	quarterly ³	all sectors	Share of yes-answers
Capacity constraints	yes/no	quarterly ³	all sectors	Share of yes-answers
Unfavorable weather conditions	yes/no	quarterly ³	manufacturing, trade, construction	Share of yes-answers
Lack of commercial space	yes/no	quarterly ³	manufacturing, services	Share of yes-answers
Insufficient business equipment	yes/no	quarterly ³	services, trade, construction	Share of yes-answers
Other factors	yes/no	quarterly ³	services, trade	Share of yes-answers
		quarterly ³	all sectors	Share of yes-answers

Notes: The questionnaires with the exact wording of all questions are displayed in (Demmelhuber et al., 2022).

1) Geometrical mean of the balances of the business situation and business expectations. 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) Monthly surveyed variables in construction.

Table A2: Overview of all Regularly Surveyed Questions

Question / Indicator	Question Type	Frequency	Surveyed Sectors	Result
Short-time work	yes/no	quarterly	all sectors	Share of yes-answers
Short-time work plans	yes/no	quarterly	all sectors	Share of yes-answers
Credit negotiations past 3 months	yes/no	quarterly	all sectors	Share of yes-answers
Credit constraints indicator	ordinal scale (three-point)	quarterly	all sectors	Share of negative-answers ⁴
Competitive position within Germany	ordinal scale (three-point)	quarterly	manufacturing	balance
Competitive position within the EU	ordinal scale (three-point)	quarterly	manufacturing	balance
Competitive position worldwide	ordinal scale (three-point)	quarterly	manufacturing	balance
Technical capacity assessment	ordinal scale (three-point)	quarterly	manufacturing	balance
Overtime work	yes/no	quarterly	manufacturing	Share of yes-answers
Customer traffic at stores	ordinal scale (three-point)	quarterly	retail trade	balance
Customer traffic online	ordinal scale (three-point)	quarterly	retail trade	balance
Share of employees working from home	quantitative	quarterly	all sectors	arithmetic mean
Profit situation assessment	ordinal scale (three-point)	biannually	manufacturing	balance
Profit situation development	ordinal scale (three-point)	biannually	manufacturing	balance
Investments current year ⁵	ordinal scale (three-point)	biannually	manufacturing, services, trade	balance
Investments previous year ⁵	ordinal scale (three-point)	annually	manufacturing, services, trade	balance
Investments next year ⁵	ordinal scale (three-point)	annually	manufacturing, services, trade	balance
Investment with debt capital	ordinal scale (three-point)	annually	manufacturing, services, trade	balance
Share of investment in climate protection	quantitative	annually	all sectors	arithmetic mean
R&D activities	yes/no	annually	manufacturing	Share of yes-answers
Share of R&D employees	quantitative	annually	manufacturing	arithmetic mean
Share of R&D spending	quantitative	annually	manufacturing	arithmetic mean

Notes: 4) The credit constraints indicator represents the share of negative-answers. The balance of positive and negative answers is less often used.

5) For the categories overall investment, investment in equipment, investment in buildings, investment in software and databases, and R&D investment.