3.4 The ifo Heatmap

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3.4.1 Objective and Concept

The ifo Business Climate Index for Germany is the main result from the ifo Business Survey. It is considered as one of the most important early indicators for the German economy. The ifo Business Cycle Clock is an expressive presentation of the ifo Business Climate Index with the phases "Boom", "Slowdown", "Crisis", and "Recovery" (see Section 3.3). Each phase depends on the current business situation and the business expectations. "Boom": a positive business situation and expectations. "Slowdown": a positive business situation accompanied by negative expectations. "Crisis': both a negative business situation and negative expectations. "Recovery": a negative business situation but expected improvement.

However, the ifo Business Climate and other results from the ifo Business Survey are not only reported on the level of the overall economy but also for numerous industries from manufacturing, construction, trade, and the service sector. These industries cover around 75 percent of the German gross value added. Therefore, the ifo Heatmap is intended to provide a compact overview of economic developments in various industries over several years (Wohlrabe and Wollmershäuser 2021). It is based on the four phases of the ifo Business Cycle Clock described above. These phases are represented by the colors light red (Recovery), dark red (Boom), light blue (Slowdown), and dark blue (Crisis). For each month, all industries shown in the ifo Heatmap get assigned one of these four colors.

3.4.2 Presentation of the ifo Heatmap

Figure 3.12 shows the ifo Heatmap as of May 2023. Subsequently, all industries included in the ifo Heatmap are listed in Table 3.3. The categorization of these industries is based on the official classification of economic activities by the German Federal Statistical Office (WZ 2008).

The ifo Heatmap shows that in the years between 2013 and 2018, the whole economy was in an almost constant boom phase with a positive situation and optimistic expectations. Only in 2019 did the economy slow down, before the outbreak of the Covid-19 pandemic in early 2020 catapulted all industries into a crisis. The ifo Heatmap clearly shows the faster recovery of the manufacturing sector while especially the service and trade sectors felt the negative influences of the second wave of infections and the resulting lockdown measures. Since the outbreak of the war in Ukraine, many industries have been in a slowdown or crisis phase.

Figure 3.12: The ifo Heatmap – May 2023

Heatmap of ifo Business Survey
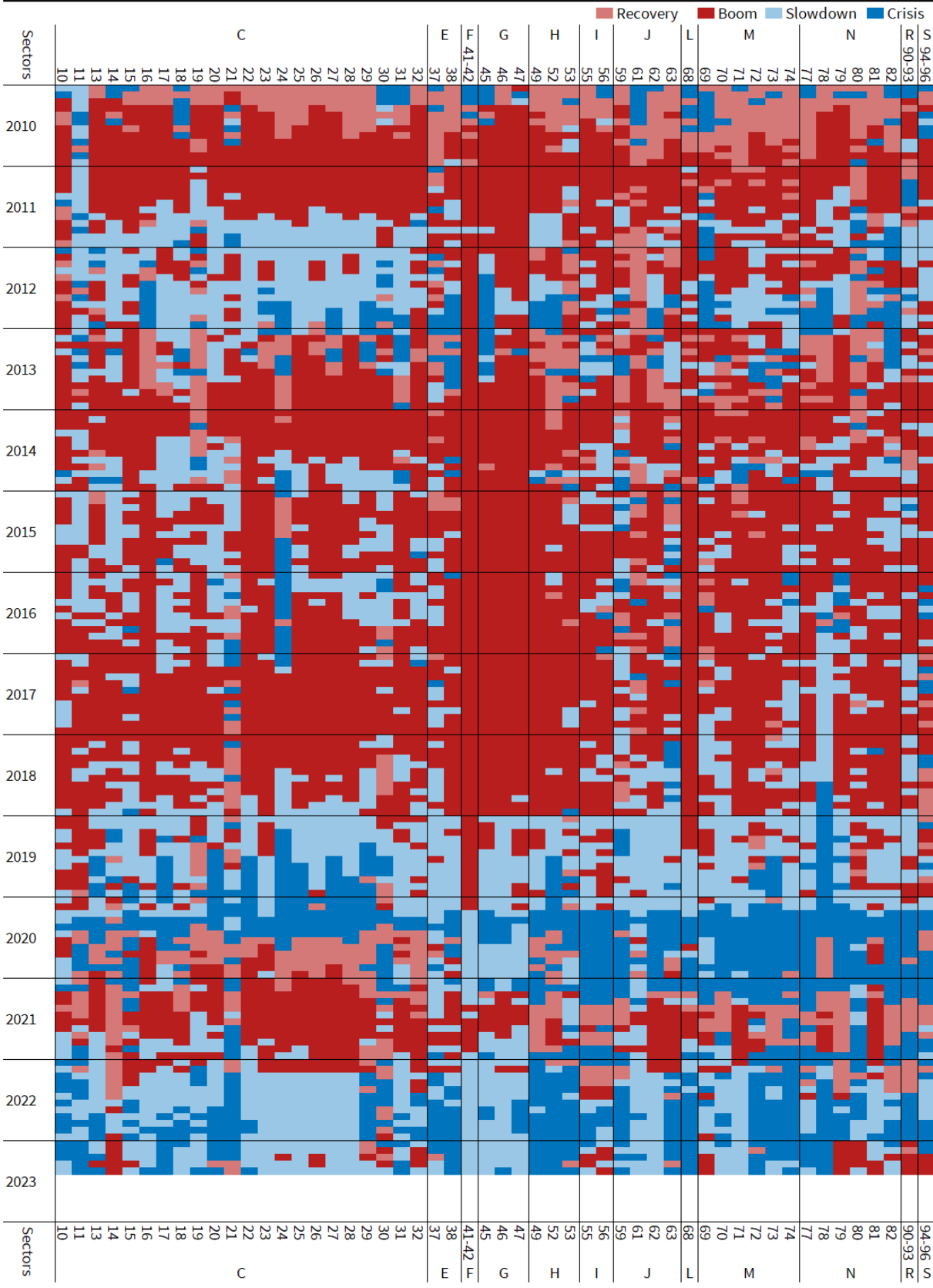
Source: ifo Business Survey.

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Table 3.3: Covered industries in the ifo Heatmap

C   Manufacturing

    10   Manufacture of food products
    11   Manufacture of beverages
    13   Manufacture of textiles
    14   Manufacture of wearing apparel
    15   Manufacture of leather and related products
    16   Manufacture of wood, straw, and cork products (except furniture)
    17   Manufacture of paper and paper products
    18   Printing and reproduction of recorded media
    19   Manufacture of refined petroleum products
    20   Manufacture of chemical products
    21   Manufacture of pharmaceutical products
    22   Manufacture of rubber and plastic products
    23   Manufacture of other non-metallic mineral products
    24   Metal production and processing
    25   Manufacture of metal products
    26   Manufacture of computer, electronic, and optical products
    27   Manufacture of electrical equipment
    28   Manufacture of machinery and equipment
    29   Manufacture of motor vehicles, trailers, and semi-trailers
    30   Manufacture of other transport equipment
    31   Manufacture of furniture
    32   Other manufacturing

E   Water supply, sewerage, waste management, and remediation activities

    37   Sewerage
    38   Waste collection, treatment, and disposal; materials recovery

F   Construction

  41-42   Construction of buildings and civil engineering

G   Wholesale and retail trade; repair of motor vehicles and motorcycles

    45   Wholesale and retail trade and repair of motor vehicles and motorcycles
    46   Wholesale trade, except of motor vehicles and motorcycles
    47   Retail trade, except of motor vehicles and motorcycles

H   Transportation and storage

    49   Land transport and transport via pipelines
    52   Warehousing and support activities for transportation
    53   Postal and courier activities

I   Accommodation and food service activities

   55   Accomodation
   56   Food and beverage service activities

J   Information and Communication

   59   Motion picture, video, and tv program production, sound recording, and music publishing activities
   61   Telecommunications
   62   Computer programming, consultancy, and related activities
   63   Information service activities

L   Real estate activities

   68   Real estate activities

M   Professional, scientific, and technical activities

   69   Legal and accounting activities
   70   Activities of head offices; management consultancy activities
   71   Architectural and engineering activities; technical testing and analysis
   72   Scientific research and development
   73   Advertising and market research
   74   Other professional, scientific, and technical activities

N   Administrative and support service activities

   77   Rental and leasing activities
   78   Employment activities
   79   Travel agency, tour operator reservation service, and related activities
   80   Security and investigation activities
   81   Services to buildings and landscape activities
   82   Office administrative, office support, and other business support activities

R   Arts, entertainment, and recreation

   90-93   Arts, entertainment, and recreation

S   Other service activities

   94-96   Other services

3.5 What gives the ifo Business Climate its Predictive Power: Results from a Meta Survey

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The ifo Business Survey's questionnaire, on the one hand, includes questions with precisely defined variables, such as turnover, prices, or the number of employees. On the other hand, some variables are formulated in a manner that is deliberately vague. This applies especially for the current business situation and the business expectations for the next six months, the two components of the ifo Business Climate. These terms are not precisely defined and are therefore open to interpretation. This has the advantage that each participating company can individually consider the most important factors. These factors can either be firm-specific, related to developments in the sector or in the general economy, or related to the economic policy framework. But which exact factors do the companies take into account most frequently? And are there sector-specific differences?

In order to answer these questions and thus to understand what gives the ifo Business Climate and its components such predictive power (Lehmann 2020, Lehmann and Reif 2021), the ifo Institute conducted a meta survey among the participating companies. The meta survey's focus lied on those factors that influence the business situation and the business expectations. Moreover, it included questions about benchmarks for the business situation and the time perspective of the business expectations. Additionally, the survey covered further information, such as the capacity utilization, the prize setting, or the person(s) completing the questionnaire. This chapter describes the meta survey's background and questionnaire and presents the main results of the questions concerning the business situation and the business expectations.

3.5.1 Background and Methods

In the early years of the ifo Business Survey (1952, 1956, 1963), the ifo Institute was already conducting meta surveys to collect background information. These meta surveys were called "We are testing the Business Survey" and were limited to questions about the general relevance of this kind of data collection. Subsequent studies focussed on individual sectors: manufacturing (1976), construction (1978), and trade (2009). The results for the trade sector suggested that the earnings situation and demand related factors, such as turnover or sales volume, are most important for assessing both the business situation and the business expectations (Abberger et al. 2011). Until 2019, however, a meta survey hadn't been conducted simultaneously for all sectors of the ifo Business Survey. That year, this gap was closed when the ifo Institute conducted a meta survey among all participants of the ifo Business Survey to uncover the factors influencing the assessments of the business situation and the business

expectations. In addition, further questions of the survey dealt with the response behaviour of the participating companies regarding the questions about price setting, number of employees, order backlogs, and capacity utilization. Moreover, the meta survey was exploited to ask information about the ifo Business Survey itself to detect possible room for improvement.

The drafting phase of the questionnaire ran from January to May 2019. Survey experts and business cycle experts of the ifo Institute identified the relevant topics of the meta survey and formulated the questions. Subsequently, the ifo Institute conducted pre-tests with selected participants from each sector. For these pre-tests, the participants were interviewed by email or by phone to validate the survey questions, detect ambiguities in the wording of the questions, or to discover missing answer categories. The pre-tests led to small adjustments of the questionnaire where necessary.

In total, 10,305 questionnaires were sent out on September 18th, 2019. The data collection lasted until October 25th. A total of 4,046 participants returned a completed questionnaire. This corresponds to a response rate of 39.3% (Table 3.4). The response rates by sector ranged between 36.3% in the retail sector and 47.9% in the construction sector.

Table 3.4: Sample size and response rate by sectors

|	Total	Manufacturing	Services	Wholesaling	Retailing	Construction
Questionnaires sent out	10,305	2,649	3,435	1,49	1,707	1,024
Questionnaires received	4,046	1,158	1,192	587	619	490
Response rate	39.3%	43.7%	34.7%	39.4%	36.3%	47.9%

3.5.2 Results

This section describes the main results of the meta survey regarding the business situation and the business expectations. The participants assessed the importance of various factors that can influence the evaluation of the business situation and the business expectations. The factors to be evaluated were the following: earnings situation, turnover, demand, stock of orders, cost situation, liquidity, business constraints, economic policy framework, stock of inventory, sentiment in the sector, and sentiment in the overall economy. The respondents assigned values between 0 (no importance) and 6 (very high importance) to each of these factors depending on their perceived degree of importance.

Figure 3.13 shows the average assessment of each factor regarding the business situation and the business expectations. The higher the value, the higher the importance of the factor. Overall, the assessments of the influencing factors lead to very similar results for both the business situation and the business expectations. The earnings situation was rated as the most important factor with values over five for both variables. Turnover and demand were the

Figure 3.13: Importance of the factors for the assessment of business situation and the business expectations
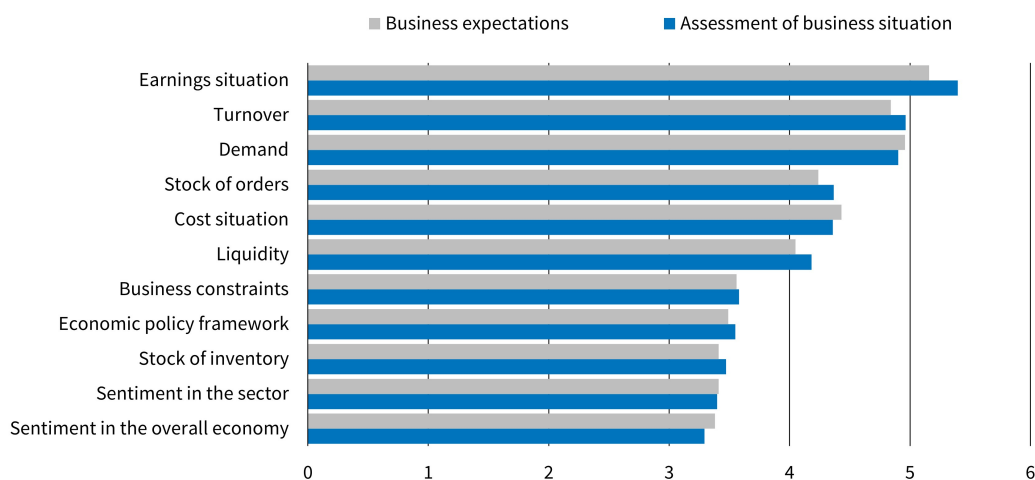
Source: Meta survey on the ifo Business Survey.   © ifo Institute

Note: Averages on a scale from 0 (no importance) to 6 (high importance).

next highest rated factors. The stock of order, the cost situation, and liquidity are all important for the business situation and the business expectations. On the other hand, the ratings are lower for external factors, such as business constraints, economic policy framework, and sentiments in the sector as well as in the overall economy. Thus, the survey participants base the assessments of the business situation and the business expectations mainly on internal company factors and not so much on external influences. On the assumption that the participants in the survey should evaluate their own company, this is an important result. If the general development of the economy played a more important role than company-specific factors, there would be a risk of only reflecting general accessible information in the index.

At the sector level, the factors are assessed similarly with only a few exceptions. For example, stock of orders is a more relevant factor, especially in the construction sector, though also in manufacturing, while it is not so important in retail. Liquidity is also very important for construction companies. Retailers focus more on turnover than companies from other sectors. The mean values of the factors are quite similar for different company sizes. Differences can only be detected for stock of orders and liquidity. Bigger companies take them less into account than smaller companies.

The meta survey included questions about benchmarks for the assessment of the business situation as well as about the time component of the business expectations. The results show that most of the companies (96.5%) use one or more benchmarks to assess their business situation. Figure 3.14 illustrates that a comparison with the business situation in the respective month of the previous year is the most used benchmark. Furthermore, goals for

Figure 3.14: Comparative benchmarks for the assessments of the business situation
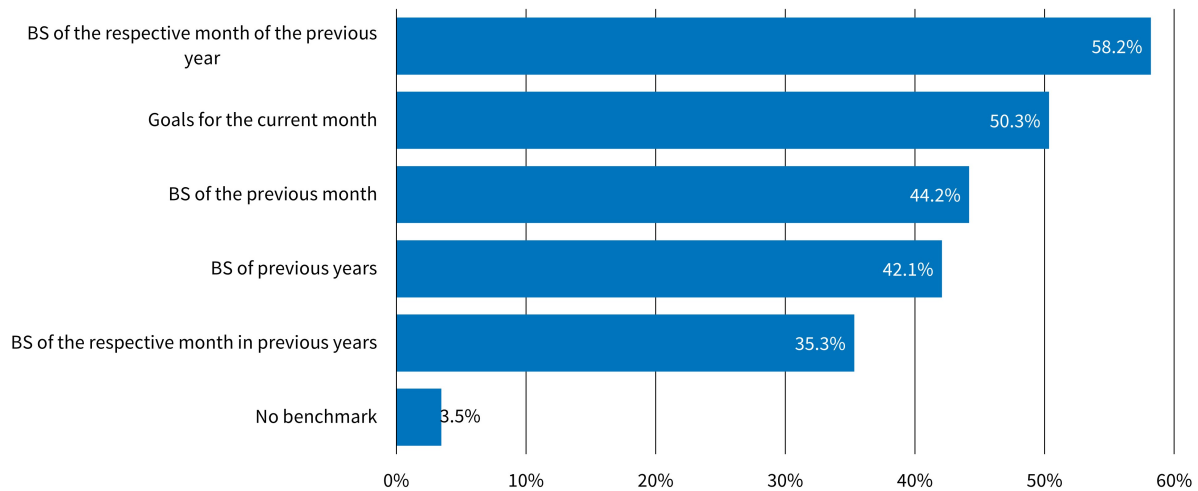
Source: Meta survey of the ifo Business Survey.   © ifo Institute

the current month are also considered by more than half of the respondents. Regarding the business expectations, the ifo Business Survey explicitly asks about "the next six months". The participants mostly interpret this time designation as for the whole time period. While 82.1% opted for this interpretation, only 16.4% stated that they consider the expectations for the point in time exactly in six months. In addition, only a few participants (1.5%) selected both options.

3.5.3 Summary and Outlook

The ifo Institute conducted a meta survey on the ifo Business Survey to learn more about the participants' considerations while they answer the questionnaire. This sheds light on the backgrounds of the results and improves their interpretation. The main results indicate that the high predictive power of the ifo Business Climate and its components the business situation and the business expectations, is mainly based on the participants' internal company factors, such as the earnings situation, turnover, and demand. The vague formulation of the terms business situation and business expectations gives the companies the flexibility of considering the factors that are important for them. The results of the meta survey show that this is a big advantage, as most companies consider a variety of factors to be important for their assessments. Freuding et al. (2021) present more detailed results.

Besides the questions about the business situation and the business expectations, the meta survey also covered other regular questions of the ifo Business Survey, such as price setting, number of employees, order backlogs, and capacity utilization. Moreover, information on the responding person(s) within the participating companies was collected. Thus, the data offers more potential for future research. The data of the meta survey can be accessed on the

microdata level at the LMU-ifo Economics & Business Data Center (EBDC). It can also be linked to the microdata of the ifo Business Survey.