

4.4 The ifo Employment Barometer

KLAUS WOHLRABE

4.4.1 Concept and Objectives

An important part of business cycle analysis is the assessment of the current situation of the labor market. From the overall economic perspective, many variables are interesting, such as the number of employed persons, vacancies, persons subject to social insurance contributions, number of unemployed, or the unemployment rate. One serious issue, however, is that some official labor market statistics, in particular the number of persons subject to social insurance contributions, are only published with a delay of three months, and reliable data are only available after six months. Although the number of registered vacancies with the Federal Employment Agency (Bundesagentur für Arbeit) can also provide timely information on the labor demand, it only gives a vague indication of the number of new jobs that have been realized.

The ifo Employment Barometer is designed to close this gap. Since 2002, it has been providing potentially valuable information on the current state of the labor market with survey-based data on the demand for labor.⁶ The ifo Employment Barometer is calculated by the ifo Institute exclusively for the Handelsblatt. This is based on approximately 9,000 monthly reports from companies in the manufacturing, construction, trade, and service sectors, whereby the companies are asked to communicate their workforce plans for the next three months.

4.4.2 Construction of the ifo Employment Barometer

Since 2002, the ifo Employment Barometer has been based on the following question in the monthly ifo Business Survey:⁷

We expect our **workforce** to

- increase
- remain roughly the same
- decrease

Companies are asked to answer the question with a horizon of three months. The aggregation to balances is carried out in the same way as described in the methodology section. The

⁶ For early methodological contributions see Hott and Kunkel (2004) and Abberger and Nierhaus (2008a). For a East-German focus see Lehmann (2010) and Vogt (2008) for Saxony.

⁷ The formulation has been in place since the harmonisation of the questionnaires on the various sectors since July 2018. Before that it was slightly different in some survey areas.

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answers are first individually weighted by firm size and then aggregated according to the value-added shares of the individual industries. The ifo Employment Barometer is then calculated for manufacturing, wholesale and retail trade, construction, and services, and based on that for the overall economy. Moreover, the ifo Employment Barometer provides results for more disaggregated sectors (e.g., mechanical engineering and chemical industry). It thus allows a separate analysis of the labor market by economic sectors or branches. The ifo Employment Barometer at the highest level of aggregation has been available since 2002, as the results of the service providers have also been available since then. Sectoral results for manufacturing, trade, and construction have also been available from 1991 onwards.

The interpretation of the balances in the ifo Employment Barometer is similar to that of the other questions. A positive balance means that a larger proportion of the (weighted) companies will increase the number of persons employed within the next three months. The balances of the ifo Employment Barometer are seasonally adjusted, but not calendar-adjusted. Experience shows that calendar effects have no effect on expectations in terms of the number of employees: For example, an additional public holiday in the following three months does not change the assessment. When calculating the index values, the balances are each normalized to the average of the year 2015 (Henzel and Wohlrabe 2014, Wohlrabe 2018).

4.4.3 Results of the ifo Employment Barometer

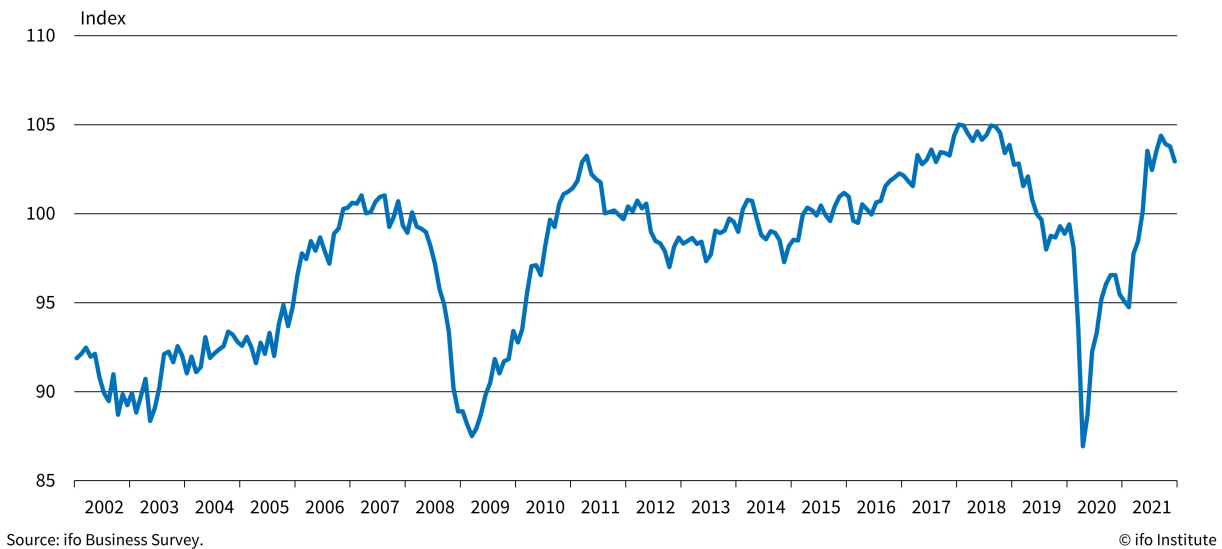
Figure 4.6 shows the development of the ifo Employment Barometer up to 2021. The first large drop was during the financial crisis in 2008/09. Then there was a clear upward trend with a peak at the end of 2018. The second large drop was due to the Corona crisis. Figure 4.7 shows the balances for the various sectors. According to these series, the most jobs are created in the service sector.

4.4.4 Predictive Quality of the ifo Employment Barometer

The ifo Employment Barometer is intended to provide an early indication of trends in the labor market and thus to complement the official labor market data. It should have leading characteristics and a high prediction quality. Using various methods, Abberger (2007) has already shown that the ifo Employment Barometer is a very good predictor for the number of employed persons in Germany.

The labor market situation cannot be described by a single variable. In particular, realized employment and unemployment do not always develop in parallel. If the workforce increases, for example because people who were not registered as unemployed (e.g., pensioners or students) take up a job, an increase in the number of people in employment does not lead to a decrease in the number of unemployed people. There are also differences in the survey technique. While the number of unemployed persons originates from purely administrative statistics, which are, for example, strongly influenced by legal changes, the employment

Figure 4.6: Development of the ifo Employment Barometer



calculation is more strongly linked to economic decisions. Moreover, unemployment statistics cover all registered persons, whereas the number of persons in employment also includes estimates, i.e., it contains some uncertainty.

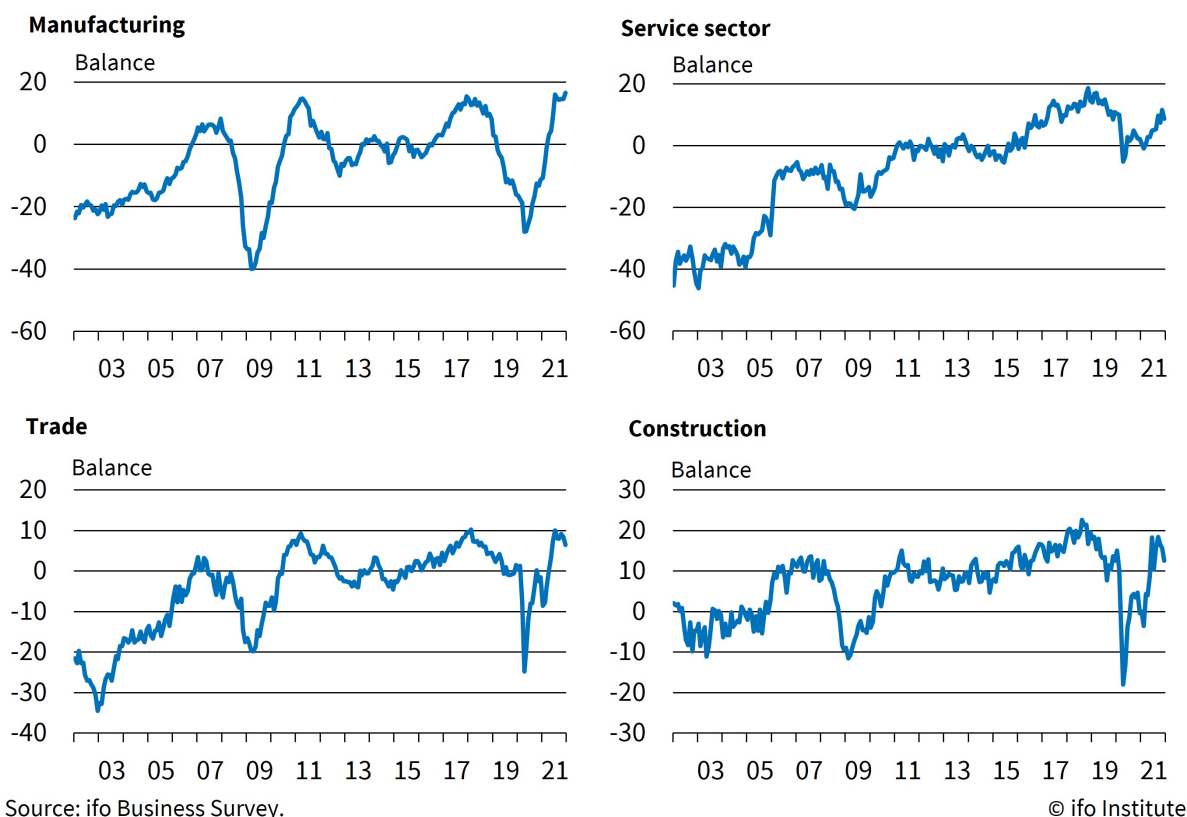
Personnel plans of firms could be measured with the help of the vacancies, among others. Reliable information on the hiring decisions is especially provided by the statistics on employees subject to social insurance contributions. However, only dependent employees are covered, and the data are submitted with a considerable delay. In order to get a comprehensive impression of the labor market situation, the following reference series are used:

- persons subject to social insurance contributions (SI employees)
- (registered) vacancies
- number of unemployed persons
- unemployment rate

These series were obtained from the Federal Employment Agency. All variables are seasonally adjusted. In order to reflect the dynamics of the labor market, the monthly and annual growth rates are calculated for the number of unemployed and for those subject to social insurance contributions. The former rather reflects the short-term dynamics at the current edge, but is strongly affected by random events and therefore often shows irregular fluctuations. The annual growth rate is more likely to be a trend development, as the reference point is further back in time, and it is only slightly influenced by the chosen seasonal adjustment method.

Figure 4.8 gives a first impression of the relationship between the ifo Employment Barometer and the reference series. The ifo Employment Barometer has a particularly strong correla-

Figure 4.7: ifo Employment Barometer by Sectors



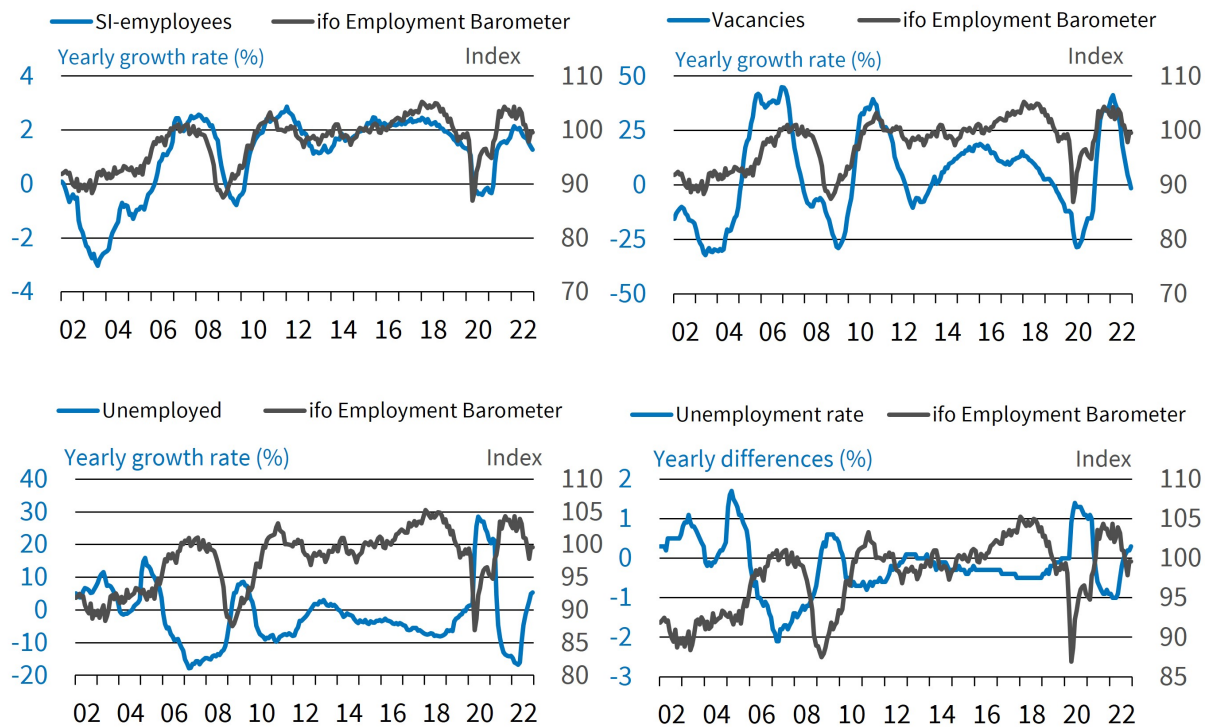
tion with the annual change in the number of persons employed subject to social insurance contributions. The slump in the number of people employed during the 2008/2009 economic crisis was reported in time. The connection with the vacancies is also very good. The turning points in the respective target series are detected apparently earlier by the ifo Employment Barometer.

With regard to the unemployment figures, it can be seen that by construction there is an inverse relationship between the number of unemployed persons and the ifo Employment Barometer. Turning points are also identified accordingly. However, it is also clear that changes in the legal framework, which primarily affect the number of registered unemployed persons but have little or no effect on labor demand, result in a temporary misindication of the ifo Employment Barometer. For example, the sharp rise in the number of unemployed persons at the beginning of 2005, triggered by the Hartz IV reform, did not lead to a corresponding decline in the ifo Employment Barometer. At that time, a large number of persons were included in the unemployment statistics who had not been added before. This is where the different survey concepts underlying the two series become apparent. The same applies to the link with the unemployment rate. However, the denominator of the unemployment rate is also influenced by changes in the number of people in employment, so that the ifo Employment

Barometer provides direct information on the current development of the unemployment rate.

The first graphical impressions shall be supplemented with a correlation analysis. The goal is to uncover leading or lagging characteristics of the ifo Employment Barometer compared to the labor market indicators. Table 4.6 shows the cross-correlations for the different reference series. In addition to correlation within the same month (contemporaneous), we also report the lead up to six months ahead (-6). In Table 4.6, the highest correlations for each reference series and the ifo Employment Barometer are highlighted in bold. The largest negative correlation is marked for unemployment figures and unemployment rates, as there is an inverse relationship here (see also Figure 4.8).

Figure 4.8: Comparison of the ifo Employment Barometer with various labour market indicators



Source: Federal Employment Agency; ifo Business Survey.

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It turns out that the ifo Employment Barometer shows a very good correlation with the number of SI employees. The highest correlation for the monthly growth rate is about 0.7 for a one-month lead time; for the annual growth rate it is even 0.82 in case of the contemporaneous comparison. The correlation is somewhat less pronounced in the case of registered vacancies. The development of the rate of unemployment shows that that the long-term dynamics can be especially well reflected here. From a comparison of the effects of short-term dynamics (monthly growth rate) and long-term dynamics (annual growth rate) on labor market, it is

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clear that the latter is better covered by the indicators. This could be due to the expectation horizon of the survey's questions, which is three months and thus somewhat longer-term. In addition, monthly growth rates are much more erratic than annual growth rates, so the correlation is usually smaller.

Table 4.6: Cross-correlations between the ifo Employment Barometer and labour market indicators

Lead in months		-6	-5	-4	-3	-2	-1	0
SI employees	MGR	0.589	0.610	0.632	0.649	0.684	0.712	0.717
	YGR	0.578	0.622	0.665	0.706	0.748	0.786	0.822
Vacancies	MGR	0.508	0.493	0.486	0.472	0.459	0.466	0.459
	YGR	0.610	0.628	0.641	0.649	0.651	0.651	0.646
Unemployed	MGR	-0.283	-0.291	-0.311	-0.332	-0.344	-0.374	-0.395
	YGR	-0.308	-0.366	-0.422	-0.478	-0.531	-0.581	-0.625
Unemployment rate	Level	-0.510	-0.534	-0.557	-0.582	-0.606	-0.632	-0.658
	YD	-0.331	-0.386	-0.436	-0.485	-0.529	-0.571	-0.606

MGR: monthly growth rate, SI: social insurance, YD: yearly difference, YGR: yearly growth rate.

Source: Employment Agency; ifo Business Survey.

4.4.5 Sectoral View

One advantage of the ifo Employment Barometer is that it allows views of the labor market according to each economic sector. Figure 4.9 shows the development of the monthly balances of the ifo Employment Barometer for the manufacturing and construction sectors compared with the corresponding annual growth rate of the SI employees. Figure 4.9a illustrates the comparison in the industry. Since employment in this sector is subject to very strong cyclical fluctuations and thus has a decisive influence on the German business cycle, it is important to accurately assess the labor market situation in this sector. Here, the ifo Employment Barometer has a stable lead. In the right-hand part of the figure, a good correlation with the annual change in employment can also be seen in the construction sector. However, a few isolated events, such as in the winter of 2009/2010, disrupt the context.

Table 4.7 shows the cross-correlations for manufacturing and construction. In both cases, the correlation is very good, especially in relation to the annual growth rate. As already shown in Figure 4.8, the ifo Employment Barometer has a good lead. The highest correlations are revealed by a monthly comparison. In the main construction industry, the ifo Employment Barometer is characterized by very good synchronization.

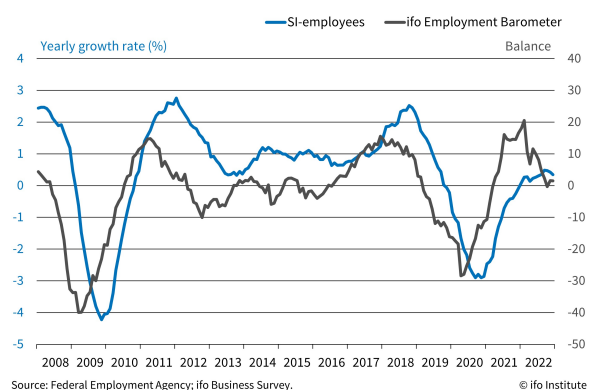
4.4.6 Analysis Potential and Research Output

Henzel and Wohlrabe (2014) compare the results of the ifo Employment Barometer with the results of the IAB Labor Market Barometer and find a close connection between both indicators

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Figure 4.9: Comparison of the ifo Employment Barometer with various labour market indicators

(a) Manufacturing



(b) Construction

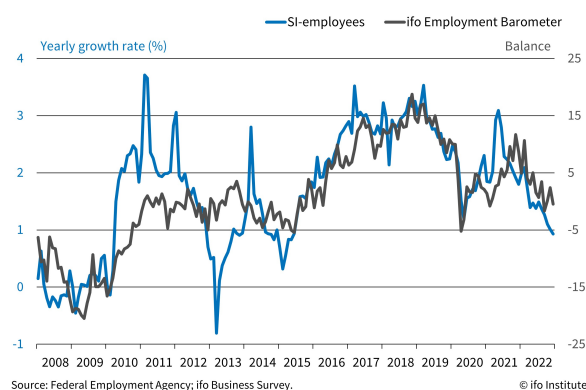


Table 4.7: Cross-correlations employment barometer and sectoral labour market indicators

lead in months		-6	-5	-4	-3	-2	-1	0
Industry SI employees								
	MGR	0.421	0.504	0.587	0.660	0.712	0.750	0.792
	YGR	-0.067	0.034	0.139	0.245	0.349	0.449	0.545
Construction SI employees								
	MGR	0.257	0.228	0.226	0.232	0.204	0.265	0.275
	YGR	0.786	0.790	0.788	0.793	0.782	0.790	0.792

MGR: monthly growth rate, SI: social insurance, YGR: yearly growth rate.

Source: Federal Employment Agency; ifo Business Surveys; calculations by the ifo Institute.

and the German labor market. They point out that the ifo Employment Barometer is the most reliable indicator of changes in employment, while the IAB Barometer provides a more detailed picture of the monthly dynamics of the number of registered unemployed persons. They also show that the ifo Employment Barometer is a reliable indicator for all target variables and proves to be advantageous when economic decisions in connection with the demand for workforce are in the foreground. However, it shows survey-based weaknesses when it comes to changes in the legal framework. Hutter and Weber (2015) also confirm the barometer's forecast for the unemployment rate using regression models. Lehmann and Wohlrabe (2017b) use the same framework for the prediction of employment figures. Lehmann and Weyh (2016) show for many European countries how survey data can be used to forecast labor market data. In the course of the harmonization of the questionnaires across the economic sectors, an ex-post question was also raised for the purpose of qualification. It asks how the number of persons employed has changed in the previous month. This is particularly important for productivity analyses. The EBDC can be used to work with the corresponding micro-data.