The German Business Panel: Evidence on Accounting and Business Taxation *

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Abstract

The German Business Panel (GBP) periodically surveys key decision-makers in a large sample of companies in Germany. The survey questions investigate the inputs to managers' accounting and taxation choices as well as the expected and perceived outcomes of those decisions. To obtain causal evidence, the survey supports the use of randomized survey experiments. The evidence from the GBP can meaningfully advance our understanding of issues that require data on internal processes as well as expectations, perceptions, and objectives behind ex-post reported accounting figures. The target population comprises the universe of legal entities included in the official German Statistical Business Register. We show that the dominance of small and medium-sized entities is a feature that Germany shares with many European countries, implying that GBP findings will be reasonably generalizable to European settings. The sampling procedure combines commercially available e-mail addresses of firms and contacts from convenience networks. The participating firms are reasonably comparable to the target population along many key characteristics, but differ in size and legal form, with small firms and especially sole proprietors being underrepresented. The GBP offers survey weights that improve representativeness. We illustrate the usefulness of GBP data by presenting evidence from the initial waves of the GBP during the COVID-19 pandemic in 2020 and 2021. The findings show how government aid programs contributed unevenly to the solvency of the most negatively affected companies, and how companies, rather than consumers, benefited from a temporary reduction of VAT rates. The paper also demonstrates how the scientific community can use the GBP data.

JEL classification: C81, D22, D25, D80, D84, H00, H12, H32, H20, H24, H25, M40, R38

Key Words: *Covid-19, Firm survey data, German Business Panel, Survey design, Tax Expectations, VAT*

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1. Introduction

How do companies arrive at a decision about reported accruals, given their financial and regulatory constraints? In which ways do the internal monitoring and management of revenues and cost structures affect decision-making within companies? How do companies react to policy uncertainty, for example with respect to future tax regulation? These are examples of common questions that prior research in accounting and taxation has addressed. Most of the evidence comes from archival data provided by public databases that compile company filings such as regulated financial statements. These common repositories of archival data offer relevant information on ex-post realizations of the accounting and taxation choices. However, they do not offer information on the design of internal processes and organizational structures of companies. They also cannot capture expectations, perceptions, and objectives that enter into the decision-making of managers and eventually shape the published accounting figures and taxation outcomes (Bloomfield et al., 2016; Graham et al., 2005; van der Stede et al., 2005). The German Business Panel (GBP) collects such data through an ongoing survey of executives and key decision-makers in a representative sample of companies from Germany. The purpose of this paper is twofold: we introduce the characteristics and the structure of the GBP data into the accounting and taxation literature, and we illustrate how its use can contribute to an advancement of this literature.

We can classify the data provided by the GBP into two categories. The first set of variables describes inputs into managers' decision-making and, thus, helps explain the determinants of companies' accounting and taxation choices. These variables include information on the organization of a company's finance function as well as the design of internal controls in managerial decision-making. The variables also capture expectations (e.g., the future tax burden), perceptions (e.g., the flexibility of the cost structure), and objectives (e.g., the intended direction

of accruals choices) that plausibly affect these decisions. The second set of variables is supposed to allow researchers an assessment of the consequences of accounting and taxation choices, including the impact of external factors (especially regulation). While these variables offer information on common outcomes of corporate accounting and taxation (e.g., investments, pricing, employment, or costs), they are also supposed to record more qualitative constructs (e.g., the level of transparency in an industry). The GBP is able to implement experimental manipulation for both sets of survey variables and, thus, provide more than descriptive evidence of important economic phenomena in the area of accounting and taxation.

Against this background, the GBP has the potential to advance research in accounting and taxation in two different ways. First, although many data sources are publicly available and widely used in research,[1] the common commercial databases and government-provided datasets are limited in terms of coverage and scope (e.g., Becker et al., 2021; Garcia Lara et al., 2006). For the most part, they contain only quantitative data from publicly disclosed financial statements or information provided in tax filings, whereas they do not cover managers' rationales and attitudes behind these numbers. Commercially available datasets also focus on publicly listed firms. As a result, we know little about the economic behavior of private firms which are often small in size but represent the largest share of companies in most economies around the world (Angelini & Generale 2008; Poschke 2018). Hence, as a complement to existing archival data, the GBP offers unique data for researchers aiming to explore managerial decision-making in companies with different legal forms and sizes.

[1] The Accounting Review used to publish submission statistics by research method and subject area. In total, 74.7% of all submitted manuscripts have been using empirical analyses based on archival data (DeFond, 2015).

Second, stand-alone or combined with other variables from public repositories of company data, the use of the GBP variables can help triangulate evidence from archival data on those questions in accounting and taxation that are particularly affected by data concerns. This includes accrual choices in financial reporting (e.g., Ball, 2013), the design of a company's costing system in management accounting (e.g., Labro, 2019), or the effects of tax uncertainty (e.g., Jacob et al., 2022). We exemplify how using GBP data can advance the empirical literature on these questions in Section 2.

Sections 3 and 4 provide details on how the survey is administered, the target population, the sampling procedure, and benchmark the sample and selected survey variables against official statistics and other data sources. These sections also explain the recurring nature of the GBP which offers the opportunity to study managerial decision-making and its consequences over time and to identify trends while controlling for unobserved firm-specific effects. The panel design is one of the distinguishing features compared to previous one-shot survey studies in accounting and taxation such as Graham et al. (2010; 2011; 2014; 2017), or Robinson et al. (2010). Another distinctive methodological feature is the implementation of the GBP as a rolling panel, which combines the benefits of a rolling cross-section design and of a panel data framework.

To further illustrate the potential use of the GBP data, Section 5 of the paper presents evidence from the initial survey waves of the GBP during the COVID-19 pandemic. Drawing from a base sample of firms available in the Orbis database, the GBP obtained more than 10,000 completed survey responses from companies across many industries during its first wave. These analyses offer examples of how evidence from GBP data can inform a policy assessment. First, the results suggest that a state-aid program, like the one in Germany, that is based on revenue subsidies rather than a cost refund fails to target most affected groups of companies. Second, the results imply that

a reduction of VAT rates helps companies alleviate cost pressure, but does not, or to a much lesser extent, lead to a decrease in consumer prices.

As the availability of GBP data to the research community is a key objective, the last section of the paper (Section 6) provides information for researchers on how to access the existing GBP data, how to contribute to the GBP with own research questions, and how to work with the data in compliance with the data protection regulations.

2. Opportunities for Survey Data in Accounting and Taxation Research

This section presents three examples from different fields where evidence from company surveys can meaningfully contribute to filling relevant gaps in the current literature.

2.1. Financial Accounting: Earnings Management

There is robust evidence that managers have reporting incentives when making accounting choices and are thus using their reporting discretion opportunistically to reap private benefits (e.g., Burgstahler et al., 2006; Dechow et al., 2010). While illegal activities (i.e., fraud) are plausibly rare, it is notoriously difficult to detect reporting bias that remains within the boundaries of GAAP. Therefore, there is no consensus about the prevalence and magnitude of earnings management (e.g., Ball, 2013; Gerakos & Kovrijnikh, 2013). One important reason for this disagreement is the opacity of the process by which managers are applying accounting rules and making their accounting choices.

Prior research has developed a very rich set of proxies that are supposed to overcome the unobservable accounting choices. Many proxies divide earnings into a non-discretionary part that reflects the economic fundamentals and a discretionary part that represents the managerial bias (see Dechow et al., 2010, for a comprehensive overview). Other proxies aim to capture intended

properties of reported earnings (e.g., timeliness or persistence; Ewert & Wagenhofer, 2011). For listed firms, earnings announcements offer an additional proxy for the informational usefulness of the reported accounting numbers. All of these proxies are observable outcomes of the accruals process. However, they remain controversial because they fail to disentangle (1) the economic fundamentals, (2) the impact of the accounting rule, and (3) the role of managerial incentives in the discretionary application of the rule (e.g., Gerakos, 2012; Ball, 2013; Leuz & Wysocki, 2016; Becker et al., 2021). This failure is mainly attributable to the unobservability of the input into the accruals process, such as managerial motives and intentions, the dealing with uncertainties, and managers' learning over time.

Prior survey studies have addressed exactly this gap. Evidence of Dichev et al. (2013) suggests that approximately 25% of companies are using accounting discretion opportunistically, which accounts for 10% of their earnings on average. These managers confirm the existence of common reporting incentives (similar to Graham et al., 2005), but they also agree with the view that the use of reporting discretion is hardly identifiable from the outside. The cross-sectional survey data is useful to triangulate the evidence from archival proxies for earnings management and earnings properties. However, it is also subject to different biases, and it is especially plausible that the same incentives that drive CFO's reporting choices are also influencing their survey responses (Nelson & Skinner, 2013).

A panel survey offers at least two advantages that potentially help reducing the limitations of cross-sectional surveys. First and most obviously, the panel is tracking answers over time and, even if the responses about the magnitude of earnings management are biased in their levels, the changes in the time-series can help reveal the underlying determinants, i.e., open the black box of the accruals process, especially when amended by panel data on other, simultaneous changes in

the company's internal organization, processes, and information environment. The GBP is collecting exactly those variables on an ongoing basis and could thus serve as a starting point to provide this evidence. Second, the design of the panel also integrates experimental treatments (such as information experiments or list experiments) that aim to directly reduce the bias in managers' responses.

2.2. Managerial Accounting: Cost Structure and Operating Planning

A second example is the design of a company's costing system (Labro, 2019). As the cost structure, i.e., operating leverage, is a key determinant of financial flexibility and a company's ability to cope with unanticipated shocks (e.g., Fahlenbrach et al., 2021; Barry et al., 2022), evidence on the setup of the internal reporting of these costs can help understand its intersection with other decisions about risk-taking and organizational design. However, managers tend to view this information as proprietary and are, therefore, hesitant to provide disclosures. Empirical research in management accounting has developed proxies that capture cost elasticities (with regard to changes in sales volume; Bhojraj et al., 2021; Kallapur & Eldenburg, 2005) and cost stickiness (Banker & Byzalov, 2014). However, as the cost structure is also a function of a company's fundamental business model, it remains unobservable to what extent the estimated cost structures are intentionally set by management and how managers factor the cost structure into other decisions.

There are several prominent settings where fixed costs play a potentially crucial role for managerial decision-making. An important one relates to short-term planning, when managers make decisions by means of a cost-volume profit analysis (CVP). At first glance, when introducing uncertainty to CVP analyses, decision makers' individual characteristics do not enter the calculus (e.g., Jaedicke & Robichek, 1964). However, fixed costs can be decision-relevant under

uncertainty if utility functions become non-exponential (Adar et al., 1977; Dillon & Nash, 1978). In case of delegation, i.e., in a principal-agent setting, the risk-aversion of the agent also becomes a critical factor (Dürr et al., 2008). Thus, the problem has become both stochastic and individual, implying that the magnitude and the impact of fixed costs can only be determined empirically.

The survey responses of the GBP help quantify the magnitude of fixed costs and the impact of cost structure and operating leverage on decision making. In addition, the GBP provides revenue and cash flow data over time, even for privately held companies. Exploiting adjustments of cash outflows and planning decisions during a crisis such as the Covid-19 pandemic offers opportunities for the estimation of other cost elasticities. When amending the cost data with proxies for the risk attitude of the decision makers, all components are available to test models such as Dillon & Nash (1978), with changes in the variables even being observable over time.

2.3. Taxation: Tax Uncertainty

A third example are the effects of tax uncertainty (e.g., Jacob et al., 2022). Publicly available data that exploit real-world events as a source of uncertainty make it difficult to disentangle uncertainty effects from average expectation effects (e.g., Brogaard et al., 2020). For example, Brogaard et al. (2020) show that global political uncertainty, as measured by the U.S. election cycle, leads to a fall in equity returns, and Rehse et al. (2019) study the effects of uncertainty on market liquidity using Hurricane Sandy as a natural experiment. While uncertainty is generally recognized to be an important factor for firm decisions, the specific empirical literature on tax uncertainty is small. A notable exception is Jacob et al. (2022) who use the implementation of a policy (schedule UTP) that requires firms to privately disclose additional details about uncertain tax positions to the IRS to study the effects of tax uncertainty on investments.

A key challenge in all uncertainty studies (tax and non-tax related) using archival data is that the leveraged uncertainty-generating events and policies do not only shift uncertainty (the second moment). They will usually also shift the average expectations of firms (the first moment). It is then difficult to disentangle whether the observed effects are caused by the change in uncertainty or by the shift in average expectations. To overcome this significant challenge, some recent papers have used surveys to exogenously shift uncertainty, without shifting the first moment. For example, Coibion et al. (2021), using household surveys, implement such a design to study the effect of macroeconomic uncertainty on household spending.

We consider two different approaches to manipulate uncertainty exogenously, without shifting the first moment, in the GBP.[2] First, a strategy along the lines of Coibion et al. (2021) where we use randomized information treatments that provide different types of information about the first and second moments of future tax developments. Second, we plan to extend the recent survey-based uncertainty literature by suggesting a novel approach to shift uncertainty without shifting the first moment through a manipulation of the response scales. These two survey designs can then be used to examine the effect of exogenously shifted tax uncertainty on various (self-reported) outcomes, for example long-term and short-term investment plans of the surveyed firms and expectations.

3. Survey Design, Sampling, and Administration

This section provides background information about the set-up and implementation of the GBP. We first outline the sampling approach and define the target population (3.1) and then discuss measures to ensure data quality (3.2). The statistics and numbers provided in this section

[2] Note that the GBP has not included any questions or survey experiments yet to study exogenous shocks in tax uncertainty but plans to implement this in the future.

and the subsequent Section 4 mainly come from the first wave of the survey (which was in the field between July and October 2020). At several points, we include statistics and results from the second survey wave (this second wave was in the field between November 2020 and July 2021). Text and notes always clarify which survey waves we include. In total, we obtained 10,174 complete survey responses in the first wave and 8,570 complete responses in the second wave.[3]

3.1. Sampling Frame and Benchmark Population

The target population of the German Business Panel consists of all legal entities active in Germany as defined by the Federal Statistical Office in the statistical business register. In practice, this refers to all businesses that have an own legal form.[4] The Federal Statistical Office reports a total of 3,559,197 companies that were active in Germany in financial year 2019. 99% of these companies are small and medium sized entities and sole proprietors (Destatis, 2021b). These entities represent an important subset because they generate 56% of employment and 43 % of gross value added in Germany according to the Federal Statistical Office (Destatis, 2021b). Moreover, as many of them are not required to publicly disclose information, they offer a particularly useful sample to study reporting incentives for voluntary disclosure (Gassen & Muhn, 2023; Minnis & Shroff, 2017). As contact addresses from administrative registers such as the statistical business

[3] The original questionnaires, as well as further information, for the two waves are available online on the website of the German Business Panel: https://gbpanel.org. We attach the GBP codebooks of the first two waves (including the original and translated survey questions) in Appendix C

[4] In German official statistics, a legal entity, "rechtliche Einheit" (until 2017 called enterprise, "Unternehmen") is defined as the smallest legally independent unit that keeps accounts for commercial or tax law purposes.Such a legal entity must assess the stock of its assets and the performance of its economic activity on an annual basis. An establishment "Niederlassung" (until 2017 referred to as a business, "Betrieb") is a local unit assigned to a legal entity and does not have such an obligation. Our definition abstracts from private agreements like a profit transfer agreement (Gewinnabführungsvertrag), a control agreement (Beherrschungsvertrag) or an integration contract (Eingliederungsvertrag), since there is no register in which such agreements are publicly reported. It also abstracts from consolidated tax filing status (steuerliche Organschaft). These latter constructs are not useful as a sampling unit or to calibrate marginal distributions, because they are not reported in any official statistics and could thus, for example, not be used for the construction of weights to achieve representativeness. The Deutsche Bundesbank follows a similar approach in their firm survey (Deutsche Bundesbank, 2021).

register are not available, the sampling frame of the GBP is based on a contact database compiled from commercial providers of company addresses. We derive the core sample of the GBP from Bureau van Dijk's coverage of German firms – both private and public ones – in their Orbis and Amadeus databases (the flat files). The Orbis and Amadeus files thus serve as a substitute for the administrative data on legal entities.

Because the GBP is set up as an online survey, we use the 949,463 companies (i.e., about one third of the target population) with available information about the email contact in the 2019 files from Orbis and Amadeus as the starting point for our sample construction. To increase the sample size, especially for those types of companies that are of particular interest for accounting and taxation research (e.g., specific legal forms), future survey waves will combine the core sample from Orbis with convenience samples recruited from existing networks (e.g., the German Schmalenbach Society or corporate partners of the universities involved in the "Accounting for Transparency" research center). In its first wave, the GBP invited all of these 949,463 companies by email to participate in the survey. About two-thirds of the emails could not be delivered and were bounced back to us, e.g., because the email address was not valid or due to sender side mailing issues. 331,300 firms received our email invitation. These email recipients represent about 12% of all 2.8 million German active firms contained in the Orbis flat files in December 2019 (see Appendix A for more details on the sample construction). The invitation emails include a personalized link and respondents fill out the survey using the Qualtrics software. 15,414 firms started the survey by responding to the question on their revenues category, and we collected 10,174 complete responses in the first survey wave, corresponding to a response rate of 3.1% (10,174 out of 331,300 firms). We use a rolling cross-section design in which we send out survey

invitations on a rolling basis. This procedure, described in more detail in Appendix A, allows for a high-frequency tracking of variables over time.

3.2. Data Quality

The GBP ensures high data quality by carefully developing and testing questionnaires. First, we conduct cognitive pretests with respondents in different positions (especially CFOs, chief accountants and tax officers, other managers, owners) from various industries, regions, and firm sizes. These pretests take place in the several months prior to the fielding of the survey questionnaire. The contacts come from the network of managers who indicate their willingness to support academic research when answering the regular GBP surveys. The main purpose of these pretests lies in the generation of feedback on the understandability, unambiguousness, and appropriateness of the survey questions for the different types of respondents. Second, all questionnaires are required to be developed from publicly pre-registered research proposals that include power calculations and an analysis plan. We publish these documents on the GBP submission module website (https://gbpanel.org/page/gbp-submission-module). The pre-registration supports the rigorous link between the initial research hypotheses and the question design. Third, the GBP runs all questionnaires as pilots with a small number of participants prior to their eventual fielding. These pilot runs mainly serve to detect any remaining implementation problems.

4. Sample Demographics, Biases, and Representatives

In this section, we provide evidence on respondent characteristics (section 4.1), discuss measurement error biases (4.2) and non-response biases (4.3). We then evaluate the

representativeness of our survey for the target population (4.4) and the generalizability of GBP data to broader international settings (4.5), especially in Europe.

4.1. Descriptive Statistics on Respondent Characteristics and Response Quality

The GBP includes questions on characteristics of the survey respondents. These responses shed light on the respondents' status and function in the company as well as their familiarity with the decision-making process in their companies. The responses show that the majority of respondents are owner-managers and CEOs (94.15%). A smaller share works in the finance, accounting, tax, or marketing department. Another small group indicates other departments, often also in a leading position. The high number of respondents who do not wish to specify their position (33.4%) might reflect the importance of data protection (the share is decreasing in more recent GBP waves).

A similar picture emerges when asking for their function in the firm. Most respondents indicate to be owners and top-level executives, few are department heads, or have other functions like board membership. Again, many respondents refuse to specify their function (26.17%). The distribution of the respondents' highest qualification shows that a master's degree is most common, followed by having served an apprenticeship and holding a master of craft's degree. Further, respondents' distribution reflects almost exactly the gender share in the German Commercial Register, see Bürgel (2010).

Table 1 reports how respondent characteristics vary with firm size. The share of female respondents is around 20% for all size classes. The share of owner-managers and CEOs decreases with firm size. In larger firms, more respondents are head of departments. This is not surprising, because firms are organized in departments more often if they are larger. Although across all size

groups, most respondents have university degrees, this share is even higher in large firms and less prevalent among small crafts businesses (Rostam-Afschar, 2020). Overall, the survey respondents thus appear well equipped to be the target persons in a firm who are able to answer the type of questions that we have, whose expectations matter for firm strategies and decisions, and who have authority to make decisions.

To validate how our survey performs in terms of response reliability, we consider some variables that are not included in register or administrative data and compare how these variables compare to corresponding variables in other surveys. Table 2 shows respondents' perception of the Covid-19 pandemic as a source of uncertainty. We benchmark these answers to an equivalent question from the survey by Bloom et al. (2021). Taking into account the differing samples, we can conclude that the GBP result that 89.5% of business face substantial uncertainty from the pandemic is in line with the finding of Bloom et al. (2021) who report 94.6% of their respondents face substantial uncertainty.

We further benchmark the findings of the GBP on the prevalence of earnings management against the results of the U.S.-based CFO survey by Dichev et al. (2013) in Table 3. The GBP asks its participants about the systematic effects of accounting options and accounting discretion on the current period's earnings (variable *em1*). 19.15% of respondents answered that their reporting decisions systematically affected the current period's earnings in any one direction. Among this group, the majority (66.44%) report that they managed earnings downwards (rather than upwards). These rates differ from the Dichev et al. (2013) results. The prevalence of earnings management is somewhat smaller in the GBP sample (19.15% vs. 24.92%), and the fraction of companies managing earnings upwards is considerably lower (33.56% vs. 57.40%). Both shares are statistically different according to a test of proportions (p-values <0.0001). Alternative

explanations are possible for these differences, e.g., the sample composition (with a much larger fraction of smaller, privately held companies in the GBP sample), the legislative framework (with tax incentives playing a potentially greater role for the GAAP reporting of German firms), and the time period (with incentives for income-decreasing reporting opportunism potentially special during the economic crisis). The comparison thus illustrates unique opportunities to address open questions about the role of earnings management in companies' reporting strategies.

We present a complementary analysis on the risk aversion of GBP respondents and participants in the SOEP survey in Appendix B.3.

4.2. Measurement Error Bias

A strength of survey data is that perceptions, expectations, and opinions may be elicited. However, this comes at the cost of potential biases. Two types of biases are particularly important for survey data: measurement error bias and non-response bias. The former dilutes effects biasing correlations under specific preconditions toward zero and may be reduced by higher quality in questions and responses. Non-response bias may distort correlations in any direction but since it can be shown to be a form of omitted variable bias, this bias may in principle be handled by including additional variables. We discuss both biases in this and the following section (a more formal conceptualization is in Appendix B.2).

Measurement error may result from using imperfect proxy variables (e.g., accruals as a proxy for financial accounting discretion), from vague formulation of questions, or from cognitive biases like recall bias. To assess how important measurement error in the GBP data is, we compare the properties of GBP variables with archival data (under the strong assumption that archival data are measured without error). We ask all survey participants for their consent to merge their data with

external data sources. Overall, 55% of all participants in the first survey wave allowed this match. As the firm's contact information is drawn from Orbis, we can match responses from all consenting firms to other information available from Orbis. As reported in Appendix B, for 15.9% of those firms that we match to Orbis, we obtain data on operating revenues. Similarly, the fraction is 14.3% for data on total assets. These fractions are higher than for the full Orbis population of firms in Germany where data on operating revenues and total assets is only available for 10.7% and 12.8% of the observations.

To examine whether survey respondents give accurate responses about their firms, we select two variables that are included both in the survey and Orbis. Table 4 presents this comparison for revenues (upper part) and the number of employees (lower part) in 2019 each. The degree of consistency can be inferred from the shares reported on the diagonals of the tables. Reassuringly, the revenues of almost 90% of all Orbis firms fall in the same category according to their survey response and the Orbis data (the 90% are calculated by summing up the values on the diagonal: 73.7 + 11.6 + 3.1 + 1.3). The high degree of consistency between the two sources is quantified by Cohen's κ, which takes the value of 71.49% (rejecting the null that there is no agreement between the two data sources with a p-value < 0.001). With respect to the number of employees, Cohen's κ takes the value of 56.30% (p-value < 0.001), which again reflects a high degree of consistency in this size measure. Note in the context of this analysis that differences between survey responses and Orbis information may also occur for other reasons than false reporting. Most differences between the GBP data and the Orbis data occur for firms with few employees. Here, differences in the counting procedures (e.g., headcount vs. FTEs) easily lead to changes in categories (e.g., when apprenticeships, part-time work, or parental leaves occur).

4.3. Sampling Bias and Nonresponse Bias

The literature on the design of surveys distinguishes between bias in the estimates due to unequal probabilities of selection from the target population (sampling bias) and due to non-response (Iarossi, 2006; Snijkers et al., 2013; Lohr, 1999). The first type of bias can result from differences between the target population (official business registry in our case) and the sampling frame (Orbis data base). Depending on the direction of differences, this is known as overcoverage or undercoverage. An example of overcoverage in our context is the inclusion of contact addresses of firms, which are no longer active on the market, e.g., due to bankruptcy. Undercoverage occurs if contact addresses of the target population are not included in the sampling frame. For example, in the GBP contact database (which is compiled using Orbis), sole proprietors are undercovered. In 2019, the Orbis database included 254,000 firms that are classified as sole-proprietors and about 237,000 firms with unknown or unrecorded legal status (presumably, a considerable portion of the latter are sole proprietors as well), whereas the official records from the business registry report about 2 million sole-proprietors (*Einzelunternehmer*; see e.g., Destatis, 2021a). It is likely that those sole-proprietors in the sampling frame differ systematically from their peers who are not included in the database, e.g., because most contact data is eventually derived from the commercial register (Handelsregister). However, registering there is not mandatory for sole proprietors and there may therefore be self-selection.

The second type of bias stems from the difference between the sampling frame (or parts of it) and the eventual sample of respondents. This type of nonresponse is typically divided into non-response to the entire questionnaire, e.g., due to refusal or failure to reach the target person (unit nonresponse), and non-response to one or more individual questions, e.g., leaving specific questions unanswered (item nonresponse).

To address potential bias in the estimates due to non-response, we reweight the data using poststratification or raking adjustment approaches (Iarossi, 2006; Battaglia et al., 2009). These methods may prove useful even in absence of non-response to increase precision of the estimates by reducing variance. At the same time, we acknowledge that adjustment weighting is no panacea against nonresponse, because it rests on demanding data requirements regarding the number of observations per weighting category and strong assumptions (e.g., about the independence of individual nonresponses; Lohr, 1999). As a standard, we provide weights for adjustment weighting with the GBP data (see section 4.4 for more details). However, using an out-of-the-box weighting scheme is not appropriate for all research questions and researchers remain responsible for generating more appropriate survey weights if this results in a better fit to the purposes of their studies.

Similar to unit-nonresponse, item-nonresponse may bias estimates, for example when asking sensitive questions like the propensity to engage in tax avoidance and evasion or earnings management. If non-response is systematic, underreporting of allegedly dubious business practices may bias results. For such cases, particular questioning methods are available like list experiments, the randomized response technique or indirect questioning. Another reason for item-nonresponse are questions that are difficult to answer or inappropriate for the respondent population. Instead of an ex-ante filtering of such questions, the GBP offers respondents the option to indicate whether they do not know an answer to the question, whether the question does not apply to their firm, or whether they refuse to answer. We recorded these answers from wave 3 on in the GBP with codes from -9996 through -9998. Dropping out of the survey completely is recorded as well (-9999).

Analyzing these error codes allows exploring whether the respondents are more willing or able to answer questions on specific topics, e.g., questions on very specific accounting or tax

matters. Table 5 presents such an analysis. It shows the error codes by education for three variables: revenue in the previous year, the earnings target of the firm, and earnings management. We expect that we receive a higher refusal rate if a question is asking about more specific or sensitive details. In fact, we observe that only less than 5% do not provide a valid answer for the question about revenue in the previous year. This is similar for the earnings target. However, when asked about earnings management, about 30% of respondents indicate that the question does not apply to their firm. For the first two questions, there is no obvious pattern across education levels. For the question on earnings management, respondents with an apprenticeship as the highest degree are about 10 percentage points less likely to provide a valid answer. The severeness of item nonresponse and the need for corrective measures thus varies substantially across the different types of questions.

4.4. Representativeness

To evaluate the representativeness of our survey, we benchmark our sample of responding firms against the population of all firms in Germany.[6] This population is tracked by the statistical business register of the Federal Statistical Office (e.g., *AFiD-Panel Unternehmensregister*, URS). The register combines data from the German Federal Employment Agency and fiscal authorities. Reporting the data is mandatory for all firms in Germany and the register is updated annually. While the Federal Statistical Office does not disclose the identity of the firms, the marginal distributions of the legal form, industries, revenues, and employees of the firms included in the registry is available.

[6] We consider the comparison of our sample with the benchmark population of all firms to be most important and therefore discuss it here in the main body of the text. A comparison of our survey sample and the population of Orbis firms with a valid email address is provided in Appendix B.

Therefore, we use the statistical business register to construct survey weights that help researchers obtain results that are as representative for the target population as possible. Using the raking method (Kolenikov, 2014) and the multiple imputation by chained equations algorithms (MICE, Royston and White, 2011), we construct the survey weights to calibrate the sample responses to the marginal distributions in the population up to an adjustment error. The survey weights take the following dimensions into account: 1-digit industry level (WZ 2008), region (East and West Germany), revenue, and number of employees. Arnemann et al. (2022) provide more details on the construction and the use of the GBP survey weights.

Table 6 compares GBP frequencies – before and after applying survey weights – for several key firm characteristics to corresponding frequencies in the 2019 business register of the German Federal Statistical Office. Starting with coverage across industries (coded by letters according to the industry classification; *Klassifikation der Wirtschaftszweige, WZ 2008*; provided by the German Federal Statistical Office), the weighted frequencies provide a sensible match with the population benchmark for waves 1 and 2 each. However, even the unweighted frequencies correspond reasonably well to their population counterparts, such that industries are covered quite evenly. The information and communication sector and the manufacturing sector are overrepresented in this raw data, while the accommodation and food service sector as well as the professional, scientific, and technical services are underrepresented.

The next two panels of Table 6 show that particularly small firms (in terms of employees and revenues) are significantly underrepresented, whareas the larger types are overrepresented. This becomes apparent when comparing the unweighted relative frequencies for employees and revenue classes with the population share in the first column. One main reason that small firms are underrepresented is the substantial under-coverage of sole proprietorships (see the numbers

presented above in Section 4.3), which becomes apparent from a comparison of the frequencies in the bottom panel across legal forms. Applying survey weights can help correct the unequal representation of different size classes (with respect to e.g., revenue and number of employees) and supports conclusions that are representative for the target population. However, as Table 6 shows, representativity with respect to the legal form (sole proprietors and corporations in particular) remains a challenge even in the weighted data.

4.5 International Comparison

We also evaluate whether the distribution of German firms and of the respondents in our survey are similar to the distributions that we see in other European countries. Given that especially EU member states exhibit similarities in business regulation and societal values, a similar distribution of firms would indicate the transferability of the GBP results. For the purpose of this international comparison, we follow Kalemli-Ozcan et al. (2019) and collect the latest data (for 2018) for all European countries from the Structural Business Statistics provided by Eurostat (SBS).

Table 7 contrasts unweighted relative frequencies from the first two waves of the GBP to the corresponding SBS statistics for the EU27 as a whole (excluding UK) and eight selected individual member states of the European Union. The table has three parts. The first five columns show the relative frequencies of firms broken down by employee size class. As before, in comparison to the data for Germany provided by Eurostat (in bold), the GBP substantially overrepresents larger firms. For example, 8% of the firms in our survey have more than 50 employees, compared to 1% in the overall population (as provided by Eurostat). The following two parts capture the economic importance of firms in different size classes measured by their share in total employment and total revenues. The middle part of the table, columns 6 through 10, reports how the total number of

employees is distributed across the five categories of firm size. Finally, the last five columns show the fraction of revenues that is generated by firms in the five different size categories.

Overall, our results are in line with the finding in Kalemli-Ozcan et al. (2019) who show that most of the gross output and employment are accounted for by small and medium sized enterprises (SMEs). The size pattern of firms is very similar between Germany and France or between Germany and the UK, while larger firms account for a lower fraction of employees and revenues in Belgium, Finland, Italy and Spain. Overall, the firm size distribution of firms is still sufficiently similar across the European countries (with the fraction of employees [revenues] attributable to the largest firms only varying between 31% and 47% [39% and 61%]). Thus, transferability of GBP results to other European countries appears reasonable.

5. Survey Results: Implications of the Covid-19 pandemic for firms

This section presents an analysis of how the COVID-19 pandemic and the ensuing economic crisis affect German firms. In a first analysis, we shed light on cross-sectional differences in how the Covid-19 pandemic has affected the accounting performance of companies in Germany. The second example exploits GBP data about companies' price-setting intentions. We analyze whether the effects of a temporary VAT cut aligned with the objectives of policy makers. While the presented evidence remains largely descriptive, the analyses are supposed to highlight the suitability of the GBP survey data to contribute to the broader debate on important and unresolved issues in accounting and taxation research.

5.1. How do the COVID-19 crisis and the government aid programs affect accounting performance and managerial perceptions?

Data from the first two survey waves provide insights into the impact of the COVID-19 pandemic on key performance indicators and management decisions during the crisis. The results also speak to the interrelation between these variables and government aid programs, thus shedding some light on the efficacy of government measures to support companies. For each company, the GBP captures the change in revenue (*ccd1*), the change in profits (*ccd6*), as well as an indicator variable for a reported loss (*ccd0*); see Appendix C for the variable definitions. This information is an important expansion of existing data because small private companies in Germany, even if obliged to disclose their financial statements as a limited liability company, are exempt from the disclosure of their P&L statements if they fall below a certain size threshold.[7] That is, income statement information remains unobservable for this fairly large number of companies and is not included in commercial databases such as BvD Orbis (Bernard et al., 2018).

Table 8 presents these indicators for the accounting performance of German companies for the first two survey waves. We list industry averages for the change in profits and revenues of the ten most heavily affected industries and add information on the five industries which experienced the least severe impact. The results confirm the conventional view that those industries are hit hardest where the business model relies on (a) the mobility of people (e.g., airline or train carriers, hotels, travel agencies) or (b) the gathering of large groups of people (e.g., restaurants, entertainment, sport events, trade fairs). The revenues of these companies have been depressed by up to 79.9% (for travel agencies and tour operators) relative to the period before the pandemic

[7] Under current disclosure regulation (see § 326 German Commercial Code), the exemption applies to limited companies that meet two of the following three criteria: (i) total assets of less than 6m Euros, (ii) total revenues of less than 12m Euros, and (iii) less than 50 employees.

spread to Germany. For most industries, the negative impact of the crisis has amplified during the second survey wave which coincided with the second peak of infection rates in Germany.

Other industries benefit from the consequences of the pandemic. On average, retail sales revenues (both within stores and direct sales) increase, and so do the revenues of chemical companies during the first survey wave. Revenues of the construction industry (both underground engineering and building installation) are also surging, pointing to potential benefits from government investments in infrastructure that were intended to foster growth. Further cross-sectional analyses reveal within-industry differences. Retail is an example for an industry that is heterogeneously exposed to the restrictions imposed by the government during the crisis. Some retail stores were allowed to remain open (especially large grocery stores and drugstores) and experience an increase in profits over the entire year, whereas other specialized stores had to close and experience an average drop in their profits by 14.5%.

In addition to the performance indicators, the GBP asks managers to assess the expected survival rate in their industry (*cun9*); the last column of Table 8 reports the average estimates for each industry from the first survey wave (July to October 2020). The variable is a useful indicator for the industry-wide level of subjective default risk. We use the variable to evaluate the effectiveness of government aid and contrast the expected survival rate for an industry with the expected likelihood of companies from that industry to survive the Corona crisis without any government aid (*cgm20*). If the two expected probabilities match, government aid is redundant as it does not change survival rates in an industry. The larger the difference between these

expectations, the more is government aid perceived to increase the likelihood of survival in an industry.[8]

At the time of the survey, the government aid program in Germany was a combination of (1) lump sum payments from the Immediate Aid Program ("Soforthilfe-Programm") determined largely by company size (measured by the number of employees) and varying in magnitude across the federal states, (2) federal subsidies for a short-term working allowance enabling companies to reduce fixed personnel costs, and (3) access to subsidized loans granted by state-owned banks such as the German Kreditanstalt für Wiederaufbau (KfW). These programs had in common that the magnitude of the government aid was not directly related to the impact of the pandemic situation on companies' accounting performance.[9]

Figure 1 illustrates the effectiveness of these government aid programs for the 29 industries for which profits decreased most. The solid line on the upper left is the 45-degree line at which survival rates would exactly correspond – with and without government aid. However, the chart shows that all of the 29 industries are clearly below that line. In all of these industries which were hit particularly hard by the crisis, government aid was perceived to have some beneficial effect. Across the board, government aid has increased the expected survivability of those 29 industries

[8] We construct this measure by using a hypothetical counterfactual derived from the survey participants' perceptions of the fraction of peer firms in their industry that had survived without any government aid. Company survival is a sensitive issue and it is plausible that respondents would not reveal any assessment of their own company without any bias. Indirect questions (such as this one about industry peers) are a well-established survey method to reduce such a bias from direct questions (e.g., Kennedy et al., 2023; Dichev et al., 2013). However, the approach by design does not offer perfect counterfactuals for a company's own survival, especially if distressed firms systematically misperceive the industry rates. Therefore, our interpretation exclusively relies on the differences between the two rates.

[9] The federal aid from the Bridging Assistance program ("Überbrückungshilfe") becoming effective in January 2021 changed this approach with government aid then becoming a function of a company's actual cost burden attributable to the pandemic situation.

by an average of 35 percentage points. Looking at individual industries, however, there is high variation in the perception.

On the one hand, there are travel agencies or event service providers whose likelihood to survive increased by 33 and 29 percentage points, respectively, thanks to government aid; on the other hand, their expected rates remain 22 and 27 points below the ones of publishing houses and 25 and 30 points below the ones of private schools. Hence, the numbers support the notion that government aid programs during this initial phase of the pandemic were little targeted and did not help companies in all industries to manage their survival to the same extent. The inequality of how firms benefitted from government aid programs is a general concern with many programs and these problems certainly generalize well beyond the particular setting of aid programs in Germany (e.g., Alekseev et al., 2023; Granja et al., 2022).

5.2. How does a temporary VAT cut affect firms' price policies?

Tax policy is a widely used tool to stimulate the economy in crisis times. A temporary cut in the VAT is a particular example of such a policy. For instance, in face of the global financial crisis, the UK government reduced the VAT standard rate from 17.5% to 15% between December 2008 and December 2009. Such a temporary cut in the VAT rate is generally expected to support the economy through a channel where consumers are motivated to bring forward spending to the crisis period, rather than waiting until post-crisis times (Crossley et al. 2009). Obviously, this mechanism will only come into effect if the temporary VAT cut indeed reduces consumption prices in the crisis period, relative to the post-crisis period when the VAT rate is back to normal. Since firms can choose to pass on the reduced VAT rate to consumers in the form of lower consumption prices or to leave prices constant (which would increase their profit margin per unit sold with a reduced

VAT rate), it is eventually an empirical question whether the reduced VAT rate comes with lower consumption prices.

To mitigate the economic impact of the COVID-19 pandemic, the German government reduced the regular VAT rate from 19% to 16 and the reduced one from 7% to 5% for the period between July 1 and December 31, 2020. Consistent with the expected economic mechanism mentioned above, boosting private consumption via lower consumption prices was the stated objective of this tax policy.

Two studies show that gasoline stations and supermarkets have passed through the tax cut almost fully to consumers by means of lower final consumption prices (Montag et al. 2020, Fuest et al. 2020). This is a first, and timely, piece of evidence suggesting that the policy can potentially work as policy makers had hoped for. However, gasoline stations and supermarkets are of course special retail sectors and do not necessarily represent the economy as a whole or other industries, and the pandemic did not hit them as heavily as other industries. In addition, these two retail sectors offer goods which are usually fairly inelastic to price changes (at least in the short run) and, compared to other consumption goods such as televisions or cell phones, it is much less plausible that consumers prepone their consumption of gasoline and groceries that they initially planned for at a later point. Therefore, it remains unclear whether the results from these studies can be extrapolated to other industries and retail sectors. While access to administrative price data for goods sold at gasoline stations and in supermarkets is generally possible, there rarely exist appropriate data on consumption prices for most other industries and retail sectors. Data that are available in real time are even rarer, albeit necessary to evaluate the policy in the short run and, for example, estimate the effects of the prolongation of such a VAT reduction.

Data from firm surveys can address the challenges that we face with the availability, as well as the (short-term) timing of availability, of archival consumption-price data. To provide this evidence, the GBP asked firms during its first wave whether they had any plans to change consumption prices for the relevant period between July and December 2020, and, if so, by how much. While consumption prices can change for many reasons, any stated adjustments in consumption prices are not necessarily fully attributable to the VAT reduction. Our results are still able to shed light on the question of whether consumption prices went down (consistent with the policy goals) during the relevant time period.

Our data show that 25.1% of all firms indicated that they have implemented, or plan to implement, adjustments to consumption prices in the period between July and December 2020. Among those indicating such an adjustment, the average price adjustment was 1.8 percentage points. Taken together, these findings imply that the overall price adjustment (across all firms) was relatively low and that consumption prices were quite stable during this time period.

However, we observe large heterogeneity across industries. This heterogeneity underlines the importance of looking at the entire economy, rather than single specific industries (such as supermarkets or gas stations). Table 9 shows the share of firms within selected industries which indicated that they were to change consumption prices, along with the average price adjustment among price changers. More than one third of all firms in the Accommodation (36%) and Food&Beverage (34%) sectors indicated plans to change prices. While the average price change among these firms is close to zero in Accommodation (because some firms increased prices and others reduced them), we observe that price changing firms in Food&Beverage even increase prices by an average of 7.0 percentage points. The latter result suggests that firms in Food&Beverage were able to pass on pandemic-induced cost pressure to consumers,. The share of

price changing firms is particularly high in retail. 40% of firms responded they would change consumption prices. Among them, the average change was a price reduction by 2.5 percentage points, suggesting that the VAT decrease was passed through to consumers.

Overall, these results suggest that prices were relatively stable with 3 out of 4 firms not changing any prices at all and that firms in some heavily affected sectors even increased prices. The last column in Table 9 reports industry-level ex-post inflation rates from national statistics as a benchmark for the price change responses from the GBP survey in the middle column. In general, the intended price changes are very similar to the realized inflation rates supporting the validity of our data. Exceptions are Food&Beverage and Construction which realize much lower price increases according to ex-post statistics than they were planning for during the first survey wave ex ante. This can reflect measurement error but could also point to a lack of pricing power when the situation deteriorated during the second half of the year with new COVID-19 restrictions becoming effective.[10]

6. Outlook

6.1 Data access and user guides

The GBP aims to follow the Open Science principles and the FAIR data principles.[11] Therefore, all researchers have access to the GBP data in three different ways. All three access options fully comply with all relevant data protection laws and also meet the survey participants' expectations regarding data security. To this end, the GBP developed a detailed data protection concept in collaboration with the data protection officer of the University of Mannheim, specifying

[10] The Statistical Office includes a notice with the monthly price index for restaurants that it is not reliable from November 2020 until April 2021 due to high statistical uncertainty. In the subsequent month, the time series then exhibits an abrupt 2 percentage point jump.

[11] FAIR is short for "findable, accessible, interoperable, reusable", see Wilkinson et al. (2016).

the control of the physical access to the data servers, the data encryption, and the monitoring during the access (e.g., through surveillance cameras).

Public Use Files (PUFs): Upon request, the GBP makes anonymized microdata available for scientific research in the form of Public Use Files (PUFs). To fully ensure anonymization, the PUFs include selected, aggregated characteristics. Therefore, researchers can only perform spatial analyses on the basis of the PUFs at the level of the federal states.

Remote data processing: Researchers who require more granular and sensitive data can take advantage of controlled remote access to the raw data. The GBP provides structure files on its website (https://gbpanel.org/page/datensatze) that can be used for the preparation and testing of codes prior to submission. These files retain the structure of the variables of the original data (i.e., the identical variable names and value labels) but they aggregate or exclude sensitive features. The raw figures from each observation are randomly altered, such that evaluations across variables are not possible with the structure data itself. The randomized generation of the structure files retains the distribution of the original variables up to sampling error. This allows for an exploration of statistics like mean, median or standard deviation without disclosure control. A variable indicating the individual survey waves in the structure files is available for longitudinal analyses.

On-site access: To forgo the typical time lag inherent to remote data processing and facilitate immediate adjustments of programming codes, researchers can also access the GBP data on-site (with the same sensitive data included in the structure file). For instance, the datasets we use in the analyses for this paper are available at the On-Site-Secure-Data-Center of GESIS in Cologne[12].

[12] More information is available on the GESIS website: https://search.gesis.org/research_data/ZA7746.

The latter two ways of data access require a data user contract, including a declaration of confidentiality. They allow for both a detailed regional analysis on the district, county, and municipality level and a linking to external data sources (see below). For example, it is possible to link regional data through the official municipality key (AGS) or industry data using the NACE Rev. 2 classification. The GBP provides user guides for the AGS and the industry classification.

6.2 Linkage with Other Data Sources

The GBP offers various possibilities for users to augment the core data with information from external databases. For example, GBP provides the industry classification of all industries following the so-called *Klassifikation der Wirtschaftszweige* (WZ 2008) of the German Federal Statistical Office. This classification is compatible with the Statistical Classification of Economic Activities in the European Community (Nomenclature statistique des activités économiques dans la Communauté européenne (NACE) Revision 2). The NACE code allows researchers to link the GBP data with further information on industry characteristics. The GBP data are also compatible with international data infrastructures. Key infrastructures are the Bureau van Dijk (BvD) or Bisnode databases. For example, the GBP includes an additional identifier, BvDID, that can be used for a merge with data from Orbis, Amadeus, or Dafne. Similarly, it is possible to link the data to the business register of the German Federal Statistical Office, Creditreform records, or the Mannheim Enterprise Panel. Generally, linkage with external data sources on the firm level is only possible for those responses where the survey participant agreed to linking the data in accordance with relevant data protection laws.

6.3. Future Waves and Opportunities for Panel Data Analyses

Future survey waves of the GBP will center on various topics in the context of accounting and taxation. A particular focus will be on questions that are either difficult to address with conventional data sources or, to track the economy and provide input for policy and public debates, that are not available with high frequency. For example, we will survey standard firm performance indicators on a high-frequency basis (with a focus on aspects of accounting and taxation) and exploit our rolling sampling to address contemporaneous developments in a timely manner. We present details on selected research questions that can be addressed with survey data above in Sections 1 and 2.

6.4. Submission of Own Research Questions and Survey Experiments

The GBP offers an opportunity for researchers to submit proposals for new questions (the GBP Submission Module, with one annual deadline typically in November). If approved, the proposed questions will be included as new instruments in the regular GBP surveys or, as a short-term project, for a limited period of time (typically up to six months). The GBP Submission module can also accommodate experiments and provides a platform for new and innovative survey instruments. To ensure data quality, submissions are required to provide and pre-register an analysis plan (see section 3.2). Submitting researchers will have exclusive access to the data from the GBP Submission module for an initial 12-month period. Afterwards, the data will be released in the regular process (see section 6.1).[13]

[13] The GBP website includes an overview of previously submitted projects: https://gbpanel.org/page/frage-einreichen/

References

Adar, Z., Barnea, A., & Lev, B. (1977). A Comprehensive Cost-Volume-Profit Analysis under Uncertainty. *The Accounting Review*, 52(1), 137-149.

Alekseev, G., Amer, S., Gopal, M., Kuchler, T., Schneider, J.W., Stroebel, J., & Wernerfelt, N. (2023). The Effects of COVID-19 on U.S. Small Businesses: Evidence from Owners, Managers, and Employees. *Management Science*, 69(1), 7-24.

Angelini, P., & Generale, A. (2008). On the evolution of firm size distributions. *American Economic Review*, 98(1), 426–438.

Arnemann, L., Eble, F., Bischof, J., Dörrenberg, P., Rostam-Afschar, D., Simons, D., & Voget, J. (2022). *A Guide on How Survey Weights of the GBP are Used (and Constructed)*. GBP. https://backend.gbpanel.org/app/uploads/2022/07/Information_Leaflet_Weights_final_2022_01_19.pdf

Ball, R. (2013). Accounting Informs Investors and Earnings Management is Rife: Two Questionable Beliefs. *Accounting Horizons*, 27(4), 847-853.

Banker, R.D., & Byzalov, D. (2014). Asymmetric Cost Behavior. *Journal of Management Accounting Research*, 26(2), 43-79.

Banker, R.D. & Hughes, J.S. (1994). Product costing and pricing. The *Accounting Review*, 69(3), 479-494.

Barry, J.W., Campello, M., Graham, J.R., & Ma, Y. (2022). Corporate flexibility in a time of crisis. *Journal of Financial Economics*, 144(3), 780-806-

Battaglia, M. P, D. C Hoaglin, & M. R Frankel. (2009). Practical Considerations in Raking Survey Data. *Survey Practice* 2 (5). https://doi.org/10.29115/SP-2009-0019.

Becker, K., Bischof, J., & Daske, H. (2021). IFRS: Markets, Practice, and Politics. *Foundations and Trends in Accounting*, 15(1-2), 1-262.

Bernard, D., Burgstahler, D., & Kaya D. (2018). Size Management by European Private Firms to Minimize Proprietary Costs of Disclosure, *Journal of Accounting and Economics*, 66(1), 94-122.

Beuselinck, C., Elfers, F., Gassen, J., & Pierk, J. (2021). Private Firm Accounting: The European Reporting Environment, Data and Research Perspectives. *Accounting and Business Research*, forthcoming, available at: https://doi.org/10.1080/00014788.2021.1982670

Bhojraj, S., Bloomfield, R.J., Jang, Y., & Yehuda, N., 2021. Cost structure, operating leverage, and CDS spreads. *The Accounting Review*, 96(5), 79-105.

Bloom, N., Bunn, P., Chen, S., Minzen, P., & Smietanka, P. (2020). The Economic Impact of Coronavirus on UK Businesses: Early Evidence from the Decision Maker Panel. https://voxeu.org/article/economic-impact-coronavirus-uk-businesses, accessed: 9/25/2020.

Bloomfield, R., Nelson, M. W., & Soltes, E. (2016). Gathering data for archival, field, survey, and experimental accounting research. Journal of Accounting Research, 54(2), 341-395.

Brogaard, J., Dai, L., Ngo, P.T., & Zhang, B. (2020). Global political uncertainty and asset prices. *The Review of Financial Studies*, 33(4), 1737-1780.

Bürgel (2010). *Geschäftsführer Demografie 2010*. Bürgel Wirtschaftsinformationen GmbH & Co. KG.

Burgstahler, D.C., Hail, L., & Leuz, C. (2006). The Importance of Reporting Incentives: Earnings Management in European Private and Public Firms, *The Accounting Review*, 81(5), 983-

1016.

Coibion, O., Gorodnichenko, Y., & Kumar, S. (2018). How do Firms Form Their Expectations? New Survey Evidence. *American Economic Review*, 108, 2671–2713.

Coibion, O., Gorodnichenko, Y., & Ropele, T. (2020). Inflation Expectations and Firm Decisions: New Causal Evidence. *The Quarterly Journal of Economics*, 135, 165–219.

Coibion, O., Georgarakos, D., Gorodnichenko, Y., Kenny, G., & Weber, M. (2021). *The Effect of Macroeconomic Uncertainty on Household Spending* (No. w28625). National Bureau of Economic Research.

Crossley, T., Low, H., & Wakefield, M. (2009). The economics of a temporary VAT cut. *IFS Working Paper* W09/02.

Da, Z., & Huang, X. (2019). Harnessing the Wisdom of Crowds. *Management Science*, 66(5), 1847-1867.

Dechow, P., Ge, W., & Schrand, C. (2010). Understanding Earnings Quality: A Review of the Proxies, Their Determinants and Their Consequences. *Journal of Accounting and Economics*, 50(2-3), 344-401.

DeFond, M. (2015). Annual Report and Editorial Commentary for The Accounting Review. *The Accounting Review*, 90(6), 2603-2638.

Deutsche Bundesbank (2021). Assessments and expectations of firms in the pandemic: findings from the Bundesbank Online Panel Firms Monthly Report April 2021. Available online: https://www.bundesbank.de/resource/blob/864912/6ea34f75ea9534b8231b4cfecfddfc3d/mL/2021-04-unternehmen-pandemie-data.pdf

Destatis (2021a). Statistisches Unternehmensregister. Rechtliche Einheiten nach zusammengefassten Rechtsformen. Available online: https://www.destatis.de/DE/Themen/Branchen-Unternehmen/Unternehmen/Unternehmensregister/Tabellen/unternehmen-rechtsformen-wz08.html

Destatis (2021b). Kleine und mittlere Unternehmen. Available online: https://www.destatis.de/DE/Themen/Branchen-Unternehmen/Unternehmen/Kleine-Unternehmen-Mittlere-Unternehmen/_inhalt.html

Dichev, I.D., Graham, J.R., Harvey, C.R., & Rajgopal, S. (2013). Earnings Quality: Evidence from the Field. *Journal of Accounting and Economics*, 56(2-3), 1-33.

Dillon, R.D., & Nash, J.F. (1978). The True Relevance of Relevant Cost. *The Accounting Review*, 53(1), 11-17.

Dürr, O.M., Göx, R.F., & Heller, U. (2008). Verfahrenswahl bei Risiko. *Zeitschrift für Betriebswirtschaft*, 78(7), 813-832.

Eurostat (2023). Producer prices in industry, Data code: STS_INPP_M, https://ec.europa.eu/eurostat/databrowser/view/STS_INPP_M/default/table?lang=en

Ewert, R., & Wagenhofer, A. (2011). Earnings Management, Conservatism, and Earnings Quality. *Foundations and Trends in Accounting*, 6(2), 65–186.

Fahlenbrach, R., Rageth, K., & Stulz, R.M. (2021). How valuable is financial flexibility when revenue stops? Evidence from the Covid-19 crisis. *Review of Financial Studies*, 34(11), 5474–5521.

Fuest, C., Neumeier, F., & Stöhlker, D. (2020). Die Preiseffekte der Mehrwertsteuersenkung in deutschen Supermärkten: Eine Analyse für mehr als 60 000 Produkte. *Ifo Schnelldienst*

Digital 13/2020.

Garcia Lara, J.M., Garcia Osma, B., & de Albornoz Noguer, B.G. (2006). Effects of database choice on international accounting research. *Abacus*, 42(3-4), 426-454.

Gassen, J. and Muhn, M. (2023). Financial transparency of private firms: Evidence from a randomized field experiment. TRR 266 Accounting for Transparency Working Paper Series No. 115.

Gerakos, J. (2012). Discussion of detecting earnings management: A new approach. *Journal of accounting Research*, 50(2), 335-347.

Gerakos, J., & Kovrijnikh, A. (2013). Performance Shocks and Misreporting. *Journal of Accounting and Economics*, 56(1), 57-72.

Goebel, J., Grabka M., Liebig S., Kroh M., Richter D., Schröder, C., & Schupp, J. (2019). The German Socio-Economic Panel (SOEP). *Jahrbücher für Nationalökonomie und Statistik*, 239(2), 345-360.

Graham, J.R., Hanlon M., & Shevlin, T. (2010). The Lockout Effect of U.S. Taxation of Worldwide Corporate Profits. Available at SSRN: https://ssrn.com/abstract=1316576 or http://dx.doi.org/10.2139/ssrn.1316576

Graham, J.R., Hanlon M., & Shevlin, T. (2011). Real Effects of Accounting Rules: Evidence from Multinational Firms' Investment Location and Profit Repatriation Decisions. *Journal of Accounting Research*, 49(1), 137-185.

Graham, J.R., Hanlon M., Shevlin, T. & Shroff, N. (2014). Incentives for Tax Planning and Avoidance: Evidence from the Field, *The Accounting Review*, 89(3), 991-1023.

Graham, J.R., Hanlon M., Shevlin, T. & Shroff, N. (2017). Tax Rates and Corporate Decision-making. *The Review of Financial Studies*, 30(9), 3128–3175.

Graham, J.R., Harvey, C.R., & Rajgopal S. (2005). The economic implications of corporate financial reporting. *Journal of Accounting and Economics*, 40, (1-3), 3-73.

Granja, J., Makridis, C., Yannelis, C., & Zwick, E. (2022). Did the Paycheck Protection Program Hit the Target? *Journal of Financial Economics*, 145(3), 725-761.

Groves, R. M., & Lyberg, L. (2010). Total survey error: Past, present, and future. *Public Opinion Quarterly*, 74(5), 849-879.

Groves, R. M., Presser, S., & Dipko, S. (2004). The role of topic interest in survey participation decisions. *Public Opinion Quarterly*, *68*(1), 2-31.

Iarossi, G. (2006). The power of survey design: A user's guide for managing surveys, interpreting results, and influencing respondents. World Bank Publications.

Irawan, C.A., Salhi, S., Luis, M., Azizi, N. (2017). The continuous single source location problem with capacity and zone-dependent fixed cost: Models and solution approaches. *European Journal of Operational Research*, 263(1), 94-107.

Jacob, M., Wentland, K., & Wentland, S.A. (2022). Real effects of tax uncertainty: Evidence from firm capital investments. *Management Science*, 68(6), pp.4065-4089.

Jaedicke, R.K., Robichek, A.A. (1964). Cost-Volume-Profit Analysis under Conditions of Uncertainty. *The Accounting Review*, 39(4), 917-926.

Kalemli-Ozcan, S., Sorensen, B., Villegas-Sanchez, C., Volosovych, V., & Yesiltas, S. (2019). *How to construct nationally representative firm level data from the Orbis global database: New facts and aggregate implications* (No. w21558). National Bureau of Economic Research.

Kallapur, S., & Eldenburg, L. (2005). Uncertainty, Real Options, and Cost Behavior: Evidence from Washington State Hospitals. *Journal of Accounting Research*, 43(5), 735-752.

Kennedy, E.B., Jensen, E.A., & Jensen, A.M. (2022). Methodological Considerations for Survey-Based Research During Emergencies and Public Health Crises: Improving the Quality of Evidence and Communication. *Frontiers in Communication*, 6, Art. 736195.

Kolenikov, S. (2014). Calibrating Survey Data Using Iterative Proportional Fitting. *Stata Journal*, 14(1), 22-59.

Kreuter, F. (2013). Facing the Nonresponse Challenge. *The ANNALS of the American Academy of Political and Social Science*, 645(1), 23–35.

Labro, E. (2019). Costing Systems. *Foundations and Trends in Accounting*, 13(3-4), 267-404.

Leuz, C., & Wysocki, P.D. (2016). The economics of disclosure and financial reporting regulation: Evidence and suggestions for future research. *Journal of Accounting Research,* 54(2), 525-622.

Lohr, S. L. (2021). Sampling: design and analysis. CRC press.

Minnis, M. and Shroff, N. (2017). Why regulate private firm disclosure and auditing? *Accounting and Business Research,* 47(5), 473-502.

Montag, F., Sagimuldina, A., & Schnitzer, M. (2020). *Are temporary value-added tax reductions passed on to consumers? Evidence from Germany's stimulus* (No. 15189). Centre for Economic Policy Research.

Nelson, M.W., & Skinner, D.J. (2013). How should we think about earnings quality? *Journal of Accounting and Economics*, 56(2-3), 34-41.

Poschke, M. (2018). The firm size distribution across countries and skill-biased change in entrepreneurial technology. *American Economic Journal: Macroeconomics*, 10(3), 1-41.

Rehse, D., Riordan, R., Rottke, N., & Zietz, J. (2019). The effects of uncertainty on market liquidity: Evidence from Hurricane Sandy. *Journal of Financial Economics*, 134(2), 318-332.

Reichelstein, S., & Rohlfing-Bastian, A. (2015): Levelized Product Cost: Concept and Decision Relevance. *The Accounting Review*, 90(4), 1653-1682.

Robinson, J.R., Sikes, S.A., & Weaver, C.D. (2010). Performance measurement of corporate tax departments. *The Accounting Review,* 85(3), 1035-1064.

Rostam-Afschar, D. (2020). Inklusive Beschäftigungspolitik: Fakten, Herausforderungen und neue Ideen zur Regulierung von Berufen. *Zeitschrift für Wirtschaftspolitik*, 69(2), 129-139.

Royston, P., & White, I.R. (2011). Multiple Imputation by Chained Equations (MICE): Implementation in Stata. *Journal of Statistical Software*, 45(4), 1-20.

Schröder, C., Bartels, C., Grabka, M.M., König, J., Kroh, M. and Siegers, R. (2020), A Novel Sampling Strategy for Surveying High Net‐Worth Individuals—A Pretest Application Using the Socio‐Economic Panel. *Review of Income and Wealth*. Series 66, Number 4, December 2020. doi: 10.1111/roiw.12452

Snijkers, G., Haraldsen, G., Jones, J., & Willimack, D. (2013). Designing and conducting business surveys. John Wiley & Sons

Statistisches Bundesamt (2023a). Verbraucherpreisindex: Deutschland, Monate, Klassifikation der Verwendungszwecke des Individualkonsums (COICOP 2-5-Steller Hierarchie), Data code: 61111-0004, https://www-genesis.destatis.de/genesis//online?operation=table&code=61111-0004#astructure

Statistisches Bundesamt (2023b). Preisindex für Einfamilienfertighäuser ohne Keller. Deutschland, Berichtsmonat im Quartal, Data code: 61261-0016, https://www-genesis.destatis.de/genesis//online?operation=table&code=61261-0016#astructure

Statistisches Bundesamt (2023c). „Erzeugerpreisindex für Dienstleistungen: Deutschland, Quartale, Wirtschaftszweige“, Data code: 61311-0004, https://www-genesis.destatis.de/genesis//online?operation=table&code=61311-0004#astructure

van der Stede, W. A., Young, S. M., & Chen, C. X. (2005). Assessing the quality of evidence in empirical management accounting research: The case of survey studies. *Accounting, Organizations and Society*, 30(7-8), 655-684.

Wagner, Gert G., Frick J. R., & Schupp, J. (2007). The German Socio-Economic Panel Study (SOEP): Scope, Evolution and Enhancements. *Journal of Applied Social Science Studies*, 127(1), 139–169.

Wilkinson, M., Dumontier, M., Aalbersberg, I. et al. (2016). The FAIR Guiding Principles for Scientific Data Management and Stewardship. *Scientific Data*, 3(1), 1-9.

Zhu, W., Zhang, Q., & Wang, H. (2019). Fixed costs and shared resources allocation in two-stage network DEA. *Annals of Operations Research*, 278(1), 177-194.

Tables and Figures

Table 1: Respondent Characteristics by Firm Size

	Micro	Small	Medium	Large	No Size	Total
Gender						
Male	79.6	80.1	84.3	82.5	74.4	79.9
Female	20.4	19.9	15.7	17.5	25.6	20.1
Position						
Owner/CEO	96.2	92.4	89.5	78.8	91.9	94.1
Department Head	2.5	5.2	9.1	17.4	4.6	4.1
Clerk	1.3	2.4	1.5	3.8	3.6	1.7
Education						
No degree	2.2	1.9	1.2	1.9	1.6	2.0
Other degree	7.5	5.7	5.6	6.0	8.8	6.9
Apprenticeship	17.4	16.2	13.8	9.5	13.8	16.5
Bachelor (university)	6.2	7.1	7.5	4.1	7.8	6.5
Master craftsperson, technician	14.4	14.4	10.2	6.0	9.6	13.7
Master (university)	46.0	48.1	53.6	63.1	50.4	47.7
PhD or higher	6.3	6.5	8.0	9.5	8.0	6.7

Table 1 reports the relative distribution of respondent characteristics in percent within categories of firm size observed in the German Business Panel, wave 1 (July – October 2020) and wave 2 (November 2020 – July 2021). No weighting is applied.

Table 2: COVID-19 as a Source of Uncertainty for Own Business, % of Respondents

	GBP Covid-19 Survey (unweighted)	GBP Covid-19 Survey (weighted)	Bloom et al. (2021) Decision Maker Panel (November 2020 - April 2021)
Very Low	3.8	4.2	0.5
Low	6.7	6.3	4.9
Medium	28.3	26.7	33.5
High	32.6	32.0	35.0
Very High	28.6	30.8	26.1

Table 2 shows the perceived degree of uncertainty for the own business (Likert scale from very low to very high) due to Covid-19. The data is derived from the German Business Panel (GBP), wave 2 (November 2020 – July 2021), and the Bloom et al. (2021) Decision Maker Panel (November 2020 - April 2021). The sample includes 8,365 firm-level observations. The data is weighted using the weights provided by the GBP. The table uses the following variable from the GBP: cun8 (see the GBP Codebooks in Appendix C for more information).

Table 3: Earnings Management in the GBP and the Dichev et al. (2013) CFO Survey

	GBP		Dichev et al. (2013)	
	N	Mean	N	Mean
% of companies managing earnings	10,009	19.15%	357	24.92%
% of companies managing earnings upwards (vs. downwards)	10,009	33.56%	360	57.40%

Table 3 shows the share of companies engaging in earnings management (% of companies managing earnings) and, among these companies, the share of companies engaging in upward earnings management (in contrast to downward earnings management). The data is derived from the German Business Panel (GBP), wave 2 (November 2020 – July 2021), and Dichev et al. (2013). The sample includes 10,009 firm-level observations in the GBP and between 357 and 360 firm-level observations from Dichev et al. (2013). The means for Dichev et. al. (2013) are weighted with the number of observations, e.g., 163/360 x 58.78 + 197/360 x 56.25. The table uses the following variable from the GBP: em1 (see the GBP Codebooks I Appendix C for more information).

Table 4: Comparison Between Survey Responses and Orbis Information

		Revenue Categories (% of 923) in ORBIS (2019)			
		0–2 Mio. Euro	2–10 Mio. Euro	10–50 Mio. Euro	>50 Mio. Euro
GBP Survey	0–2 Mio. Euro	73.7	2.7	0.0	0.3
	2–10 Mio. Euro	4.3	11.6	0.0	0.0
	10–50 Mio. Euro	1.5	0.2	3.1	0.1
	>50 Mio. Euro	0.4	0.2	0.4	1.3
		Employee Categories (% of 2,915) in ORBIS (2019)			
		0–9	10–49	50–249	> 250
GBP Survey	0–9	62.4	6.1	0.0	0.0
	10–49	8.2	15.4	0.5	0.0
	50–249	2.2	0.8	2.6	0.1
	> 250	0.8	0.2	0.3	0.4

Table 4 reports the relative frequency of firms in two cross-tabulated size categories. The rows correspond to annual revenue and number of employees reported by firms in the German Business Panel survey. The columns correspond to annual revenue and number of employees contained in Orbis. The data sources are the German Business Panel (GBP), wave 1 (July – October 2020), and Orbis data (2019). The sample includes 923 firm-level observations for the revenue categories and 2,915 firm-level observations for the employee categories. The table uses the following variables from the GBP: ccgic3, ccgic6 (see the GBP Codebooks in Appendix C for more information).

Table 5: Item-Nonresponse by Education

	Revenues in previous year					
	Dropout -9999	Refusal -9998	Do not know -9997	Does not apply -9996	Valid answer	N
Education						
No degree	1.6	0.0	0.0	0.0	98.4	64
Other degree	1.5	0.8	0.0	2.3	95.5	266
Apprenticeship	1.0	0.3	0.0	0.7	98.0	715
Bachelor (university)	1.3	0.3	0.0	1.6	96.8	311
Master craftsperson, technician	1.1	0.3	0.0	0.4	98.3	744
Master (university)	0.9	0.6	0.0	1.1	97.4	2,037
PhD, Habilitation	2.3	0.0	0.0	2.0	95.6	298
						4,435
	Earnings target					
	Dropout -9999	Refusal -9998	Do not know -9997	Does not apply -9996	Valid answer	N
Education						
No degree	0.0	0.0	0.0	0.0	100.0	6
Other degree	2.9	0.0	0.0	0.0	97.1	34
Apprenticeship	2.1	0.0	0.0	0.0	97.9	95
Bachelor (university)	2.0	0.0	0.0	0.0	98.0	49
Master craftsperson, technician	2.0	0.0	0.0	0.0	98.0	101
Master (university)	3.5	0.0	0.0	0.0	96.5	259
PhD, Habilitation	5.4	0.0	0.0	0.0	94.6	37
						581
	Earnings management					
	Dropout -9999	Refusal -9998	Do not know -9997	Does not apply -9996	Valid answer	N
Education						
No degree	0.0	0.0	0.0	0.0	100.0	6
Other degree	0.0	0.0	0.0	35.3	64.7	34
Apprenticeship	1.1	0.0	0.0	35.8	63.2	95
Bachelor (university)	0.0	0.0	0.0	36.7	63.3	49
Master craftsperson, technician	1.0	0.0	0.0	26.7	72.3	101
Master (university)	0.8	0.0	0.0	29.3	69.9	259
PhD, Habilitation	0.0	0.0	0.0	27.0	73.0	37
						581

Table 5 reports the relative frequencies (in percent) of non-response categories and valid responses to survey questions in wave 3 of the German Business Panel (June – December 2021). All 4,435 participants received the question on previous year's revenues, but only a randomly drawn subsample of 581 participants received the questions on earnings target and earnings management. No weighting is applied.

Table 6: Distribution of Firm Characteristics in the GBP vs. Target Population

	Statistical Register (2019)	Survey Wave 1		Survey Wave 2	
		Unweighted	Weighted	Unweighted	Weighted
Industries					
(B) Mining and quarrying	0.1	0.2	0.1	0.4	0.1
(C) Manufacturing	6.4	11.9	6.4	17.3	6.7
(D) Electricity, gas, steam and air conditioning supply	2.2	1.4	2.0	0.6	1.4
(E) Water supply; sewerage, waste management and remediation activities	0.3	0.5	0.3	0.5	0.4
(F) Construction	11.0	7.0	10.5	6.5	11.2
(G) Wholesale and retail trade; repair of motor vehicles and motorcycles	17.1	15.8	16.9	14.7	17.3
(H) Transportation and storage	3.2	2.4	3.2	2.7	3.4
(I) Accommodation and food service activities	7.1	4.2	6.7	5.1	5.8
(J) Information and communication	3.9	13.7	4.0	12.6	4.2
(K) Financial and insurance activities	2.1	3.2	2.1	3.6	2.3
(L) Real estate activities	5.3	3.3	5.1	2.9	5.3
(M) Professional, scientific and technical activities	15.0	11.5	14.9	13.1	15.5
(N) Administrative and support service activities	6.4	7.6	6.5	6.9	7.3
(P) Education	2.3	1.5	2.2	2.3	2.3
(Q) Human health and social work activities	7.1	5.0	6.9	2.6	4.8
(R) Arts, entertainment and recreation	3.4	4.0	3.4	3.2	3.6
(S) Other service activities	6.9	4.7	6.8	3.0	6.2
Total	3,559,197		10,174		7,200
Number of Employees subject to Social Security					
0 to 9 employees	87.4	65.5	87.1	67.3	86.6
10 to 49 employees	10.1	25.6	10.3	24.7	10.7
50 to 249 employees	2.1	6.5	2.1	6.4	2.2
250 and more employees	0.5	2.4	0.5	1.7	0.5
Total	3,559,197		10,076		7,719

Revenue					
below 2 million	93.2	75.5	92.9	77.2	92.8
2 to 10 million	5.1	16.6	5.3	16.0	5.4
10 to 50 million	1.3	5.3	1.4	4.9	1.4
50 million and more	0.4	2.5	0.4	1.8	0.4
Total	3,559,197		9.982		8,485
Legal Form					
Sole proprietorship	60.9	11.2	14.2	12.9	16.2
Corporation	21.3	70.9	68.0	67.9	64.6
Partnership	11.3	13.8	12.8	13.2	11.6
Other legal form	6.4	4.1	4.9	5.9	7.6
Total	3,559,197		10,156		8,570

Table 6 shows the share of firms in each category of industry, employment size class, revenue class, and legal form. The data is derived from the German Business Panel (GBP), wave 1 (July – October 2020) and wave 2 (November 2020 – July 2021), and the legal form from the German Federal Statistical Office (Statistisches Bundesamt (Destatis)) for the 2019 reporting period. The sample includes 10,174 and 8,570 firm-level observations (including industries classified as A, O, T, and U) in the GBP for Survey Wave 1 and 2, and 3,559,197 firm-level observations in the Business Register. The data is weighted using the weights provided by the GBP. The table uses the following variables from the GBP: ccgic1, ccgic3, ccgic6, industry_WZ08 (see the GBP Codebooks in Appendix C for more information).

Table 7: Firm Size Distributions in GBP Sample and according to Eurostat

	Distribution of Firm Frequencies by Size					Distribution in Terms of Employment by Size					Distribution in Terms of Turnover by Size				
	0 to 9	10 to 19	20 to 49	50 to 249	>250	0 to 9	10 to 19	20 to 49	50 to 249	>250	0 to 9	10 to 19	20 to 49	50 to 249	>250
GBPW1	0.66	0.14	0.11	0.06	0.02	0.07	0.06	0.12	0.30	0.44	0.04	0.02	0.05	0.14	0.75
GBPW2	0.67	0.14	0.11	0.06	0.02	0.07	0.07	0.12	0.32	0.42	0.04	0.13	0.07	0.06	0.69
EU27	0.93	0.04	0.02	0.01	0.00	0.29	0.09	0.11	0.16	0.35	0.16	0.07	0.10	0.18	0.49
BE	0.95	0.03	0.01	0.01	0.00	0.34	0.08	0.10	0.14	0.35	0.23	0.09	0.11	0.18	0.39
DE	**0.83**	**0.09**	**0.05**	**0.02**	**0.00**	**0.19**	**0.11**	**0.12**	**0.17**	**0.41**	**0.10**	**0.06**	**0.08**	**0.15**	**0.61**
DK	0.88	0.06	0.04	0.02	0.00	0.25	n/a	n/a	0.28	0.47	0.20	n/a	n/a	0.26	0.54
ES	0.94	0.03	0.02	0.01	0.00	0.36	0.09	0.11	0.13	0.31	0.20	0.08	0.11	0.17	0.44
FI	0.91	0.05	0.03	0.01	0.00	0.23	0.10	0.13	0.19	0.35	0.15	0.07	0.11	0.22	0.45
FR	0.96	0.02	0.01	0.01	0.00	0.25	0.07	0.08	0.13	0.47	0.16	0.05	0.07	0.13	0.59
UK	0.90	0.05	0.03	0.01	0.00	0.19	0.08	0.11	0.16	0.46	0.17	0.06	0.08	0.15	0.53
IT	0.96	0.03	n/a	0.01	n/a	0.64	0.16	n/a	0.20	n/a	0.43	0.19	n/a	0.38	n/a

Table 7 presents the frequency distribution of companies across size categories of 0 to 9, 10 to 19, 20 to 49, 50 to 249 and above 250 employees, the distribution of employees and the distribution of revenues across the same size clusters. The data is derived from the German Business Panel (GBP), wave 1 (July – October 2020) and wave 2 (November 2020 – July 2021), and from Eurostat (2018, retrieved on July 27, 2021). Countries are denoted by ISO 3166 ALPHA2 country codes. The sample includes 21,543 firm-level observations. To calculate the distribution of employees, we have used the mid points of the size bins. To calculate the distribution of revenues, we have used the exact amount of revenues (as reported) before aggregating them into the size clusters. The table uses the following variables from the GBP: ccgic2, ccgic6 (see the GBP Codebooks in Appendix C for more information).

Table 8: The Impact of the COVID-19 Crisis by 3-digit Industry

Panel A: Survey Wave 1 (July to October 2020)			
	Change in Revenues	Change in Profits	Survival of Industry
Industries with the most negative impact on revenues:			
Organization of conventions and trade shows	-72.8	-64.1	53.4
Travel agency and tour operator activities	-66.3	-62.8	59.4
Event catering and other food service activities	-60.2	-63.3	62.1
Amusement and recreation activities	-58.9	-59.2	61.9
Other passenger land transport	-58.9	-54.2	70.9
Hotels and similar accommodation	-52.1	-51.8	67.5
Printing and service activities related to printing	-49.9	-48.7	65.8
Beverage serving activities	-47.1	-40.1	61.0
Creative, arts and entertainment activities	-45.8	-46.5	65.3
Sports activities	-44.4	-34.8	76.2
Industries with the most positive impact on revenues:			
Manufacture of other chemical products	7.7	0.9	85.7
Construction of other civil engineering projects	5.2	6.7	87.5
Electrical, plumbing and other construction installation activities	5.0	6.8	87.3
Retail sale of food, beverages and tobacco in specialised stores	2.1	-4.8	76.8
Retail trade not in stores, stalls or markets	1.3	-1.6	78.8

Panel B. Survey Wave 2 (November 2020 to July 2021)			
	Change in Revenues	Change in Profits	Survival of Industry
Industries with the most negative impact on revenues:			
Travel agency and tour operator activities	-79.9	-75.7	57.2
Organisation of conventions and trade shows	-75.7	-73.3	52.5
Creative, arts and entertainment activities	-62.0	-55.2	58.3
Hotels and similar accommodation	-54.9	-52.6	61.2
Beverage serving activities	-51.6	-58.0	55.3

Restaurants and mobile food service activities	-46.5	-46.5	60.8
Sports activities	-36.3	-26.9	76.1
Other education	-34.6	-32.6	67.9
Specialised design activities	-31.8	-34.2	62.2
Advertising	-30.4	-34.7	69.9
Industries with the most positive impact on revenues:			
Retail trade not in stores, stalls or markets	11.1	8.9	77.1
Accounting, bookkeeping and auditing activities; tax consultancy	5.4	4.3	90.2
Other specialised construction activities	-0.5	-5.7	80.4
Construction of residential and non-residential buildings	-0.7	-1.4	78.7
Activities auxiliary to insurance and pension funding	-2.5	-0.9	82.2

Table 8 shows the change in revenues, change in profits, and survival of industry in percent for the 3-digit industries that are most and least negatively affected by the Covid-19 pandemic. The data is derived from the German Business Panel (GBP), wave 1 (July – October 2020) and wave 2 (November 2020 – July 2021). The table includes 1,183 firm-level observations in wave 1 and 1,411 in wave 2. The data is weighted using weights provided by the GBP. The table uses the following variables from the GBP: ccd1, ccd6, cun9, industry_WZ08 (see the GBP Codebooks in Appendix C for more information).

Table 9: Changes of Final Consumption Prices (between July and December 2020) in Selected Industries

Industry	Share of Firms	Average Price Change	Benchmark Comparison
Retail	40.3	-2.5	-2.7
Accommodation	35.7	-0.2	-1.4
Food and beverage	33.7	7.0	0.2
Wholesale	30.3	-1.7	-1.1
Art and Travel	27.8	3.7	4.3
Construction	27.2	4.2	0.3
Legal and accounting services	26.7	3.3	3.1
Manufacturing	25.3	1.2	1.0

Table 9 shows the share of firms that plan to change their prices between July and December 2020 and average price changes for selected industries. The data is derived from the German Business Panel (GBP), wave 1 (July – October 2020). The sample includes 4,251 firm-level observations. The data is weighted using the weights provided by the GBP. The table uses The first two columns report the following variables from the GBP: cps1, cps2, which contain the responses to the questions "Have you already changed prices since July 1st or do you plan to change prices for your end products before December 31st, 2020?" and "By how much have you changed or are you planning to change the prices of your end products between July 1st and December 31st, 2020?". The phrasing of the question is meant to ensure that survey participants give responses with respect to gross prices and that all participants consider the price change related to the same time span of six months. See the GBP Codebook in Appendix C for further information on variables. The last column reports the inflation inferred from the most closely related available monthly price index. The first five items are based on the German Federal Statistical Office's monthly consumer price indices: CC13-01, CC13-112, CC13-111, CC13-05, CC13-094. See Statistisches Bundesamt (2023a), Statistisches Bundesamt (2023b), Statistisches Bundesamt (2023c) and Eurostat (2023). For Construction, it is based on the German Federal Statistical Office's quarterly price index for prefab detached houses. For Legal and accounting services, it is based on the German Federal Statistical Office's quarterly producer price index for services, WZ08-69-03. For Manufacturing, it is based on Germany's monthly industrial producer price index (excluding construction) STS-INPP_M by Eurostat.

Figure 1: The Efficacy of Government Support by Industries

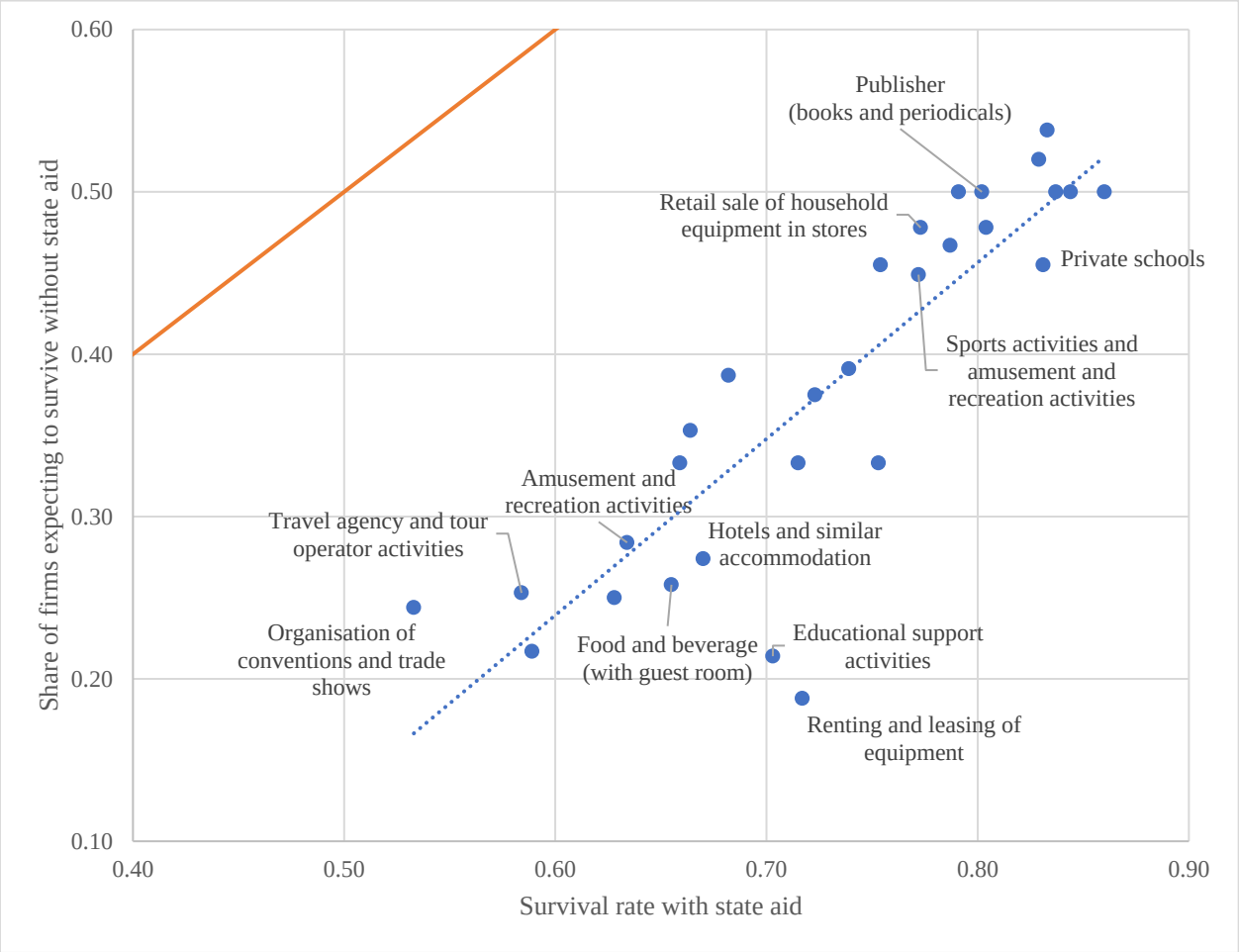

Figure presents expected survival rates for 3-digit industries (on the x-axis) and the share of firms from this industry that expect to survive without state aid (on the y-axis). For industries where government support has not been effective, the solid 45-degree line would intersect with the industry's data point. The figure presents 29 industries with the lowest survival probabilities. The data is derived from the German Business Panel (GBP), wave 1 (July – October 2020). The sample includes 2,440 firm-level observations. The figure uses the following variables from the GBP: cgm20, cun9 (see the GBP Codebooks in Appendix C for more information).

The German Business Panel:
Evidence on Accounting and Business Taxation

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Appendix

(for online publication)

The Appendix has three parts.

- **Appendix A** provides further information about the sampling frame and the procedure for inviting firms to participate in the survey. This Appendix part also presents the geographic coverage of survey participants across Germany.
- **Appendix B** compares our survey sample with the sample of firms that has recorded email addresses in the Orbis database to shed light on non-response bias (B.1). It also conceptualizes potential biases as a theoretical problem (B.2) and presents a further comparison between GBP variables and variables from other data sources (B.3).
- **Appendix C** contains the original and publicly available codebooks of the first two survey waves of the GBP. These codebooks include the original and translated survey questions

as well as further information about the survey and variables. These codebooks are also available on the GBP website: https://gbpanel.org/.

A. Further Details on Sampling and Survey Methodology

The target population of the German Business Panel are all legal entities active in Germany. We follow the definition of the Federal Statistical Office of legally independent businesses, called more recently legal entities. In practice this refers to businesses that have an own legal form as opposed to establishments that are part of another business with a legal form.[1] The most complete data on the population is collected in the Federal Statistical Office (*AFiD-Panel Unternehmensregister, URS*, referred to in the paper as the statistical business register). The register combines data from the German Federal Employment Agency and Fiscal authorities and can be used to benchmark the distribution of firms by legal form, industries, revenues and employees. Reporting the data is mandatory for all firms in Germany and is updated annually. For data protection, the Federal Statistical Office does not disclosure the addresses of the companies, not even for research purposes.

Therefore, in order to reach out to firms, the GBP collects address information from the commercial Bureau van Dijk databases Orbis and Amadeus 2019. In the future, we will also establish a convenience sample where we collect addresses through other sources (e.g., personal contacts to companies, company associations, commercial providers of contact data).

[1] In German official statistics, a legal entity, "rechtliche Einhheit" (until 2017 called enterprise, "Unternehmen") is defined as the smallest legally independent unit that keeps accounts for commercial or tax law purposes. Furthermore, a legal entity must assess the stock of assets and success of the economic activity on an annual basis. An establishment "Niederlassung" (until 2017 referred to as an business, "Betrieb") is a local unit assigned to a legal entity. This definition ignores private agreements like a profit transfer agreement (Gewinnabführungsvertrag), a control agreement (Beherrschungsvertrag) or an integration contract (Eingliederungsvertrag), since there is no register in which such agreements are publicly reported. It also ignores consolidated tax filing status (steuerliche Organschaft), which is available information in the AFiD-Panel Unternehmensregister. These variables may perhaps be interesting for specific research questions and a question on them might be included in the GBP, however, they are not useful as a sampling unit or to calibrate marginal distributions, since they are not reported in official statistics.

The set of businesses in the sampling frame with data available in BvD Orbis and Amadeus 2019 was thus identified as the subset of businesses eligible to participate in the GBP Survey (for the first two survey waves). The BvD Orbis (flat files) and Amadeus provide addresses of a large set of businesses from official registries and heavily underrepresent small firms. In April 2020, we extracted legally independent businesses with generic or personal email addresses from the sampling frame. The number of firms with email addresses available in Orbis was 949,463. We sent survey invitations to these firms, but not all emails could be delivered and were bounced back to us (because of invalid email addresses).[2] We eventually delivered 331,300 emails to firms (see Appendix B below for an analysis of response bias).

The sampling frame based on the BvD Orbis and Amadeus data is updated continuously via email addresses provided by respondents, web scraping, and desk research. We have updated more than 91,000 email addresses in this way so far.

The respondents were asked to complete the survey through a computer assisted web interview (CAWI). The GBP Survey is a voluntary survey. For each daily survey, emails were delivered on workdays using staggered times to gauge optimal timing of email delivery on response in the pilot phase. Emails were sent starting from 5.30 am to avoid delayed sending due to potential server capacity constraints during the day (the default GBP sending time is 6:00 am). The email provided a personalized survey link and directed respondents to the GBP landing page (http://gbpanel.org) that provided information about the survey. In addition, a GBP contact email address (gbpinfo@mail.uni-mannheim.de) and a telephone number were provided for respondents to send questions about the survey. The GBP staff provides the responses to these questions.

[2] We changed the mailing server and updated our contact database in wave 3, which helped to reduce the bounce rate from 61.5% in wave 1 and 63.8% in wave 2 to 15.3%.

The GBP Survey is a semiannual panel with a rolling survey structure at the workday level. For the rolling survey structure of the first survey wave, the full set of eligible businesses was divided randomly into 20 daily packages for the daily e-mail invitations to respond to the survey. For the first wave, we started sending invitations on June 6, 2020 and sent the last set of invitations on July 31, 2020.[3] A first follow-up reminder e-mail was sent after seven days to all non-respondents in the daily panel. An additional follow up reminder email was sent after 14 days. The last reminder was sent on August 14, 2020. We sent a thank you message on October 23, 2020.

The survey was implemented using the cloud-based commercial platform Qualtrics for creating and distributing web-based surveys as well as with python and java script codes written by the GBP team. Datasets and additional variables are prepared for research use from the raw data using Stata.

The GBP sample covers companies from all regions of Germany. Figure A1 presents the spatial distribution of respondents by county. Naturally, in areas with lower population density (e.g., federal state of Brandenburg), the number of companies is small, while the number of companies is relatively large in metropolitan regions with above-average GDP like Hamburg, Frankfurt, Stuttgart, Cologne, or Munich.

[3] For the second wave, we sent invitations e-mails for the online survey on 45 workdays between November 16, 2020 and January 22, 2021. Firms were randomly assigned to one of the 45 days. After seven, 14, and 28 days, we sent a reminder e-mail. We collected survey responses from November 16, 2020 through June 24, 2021 in CAWI mode and from November 16, 2020 through April, 16, 2021 in CATI mode.

Figure A1: Spatial Distribution of GBP Participants

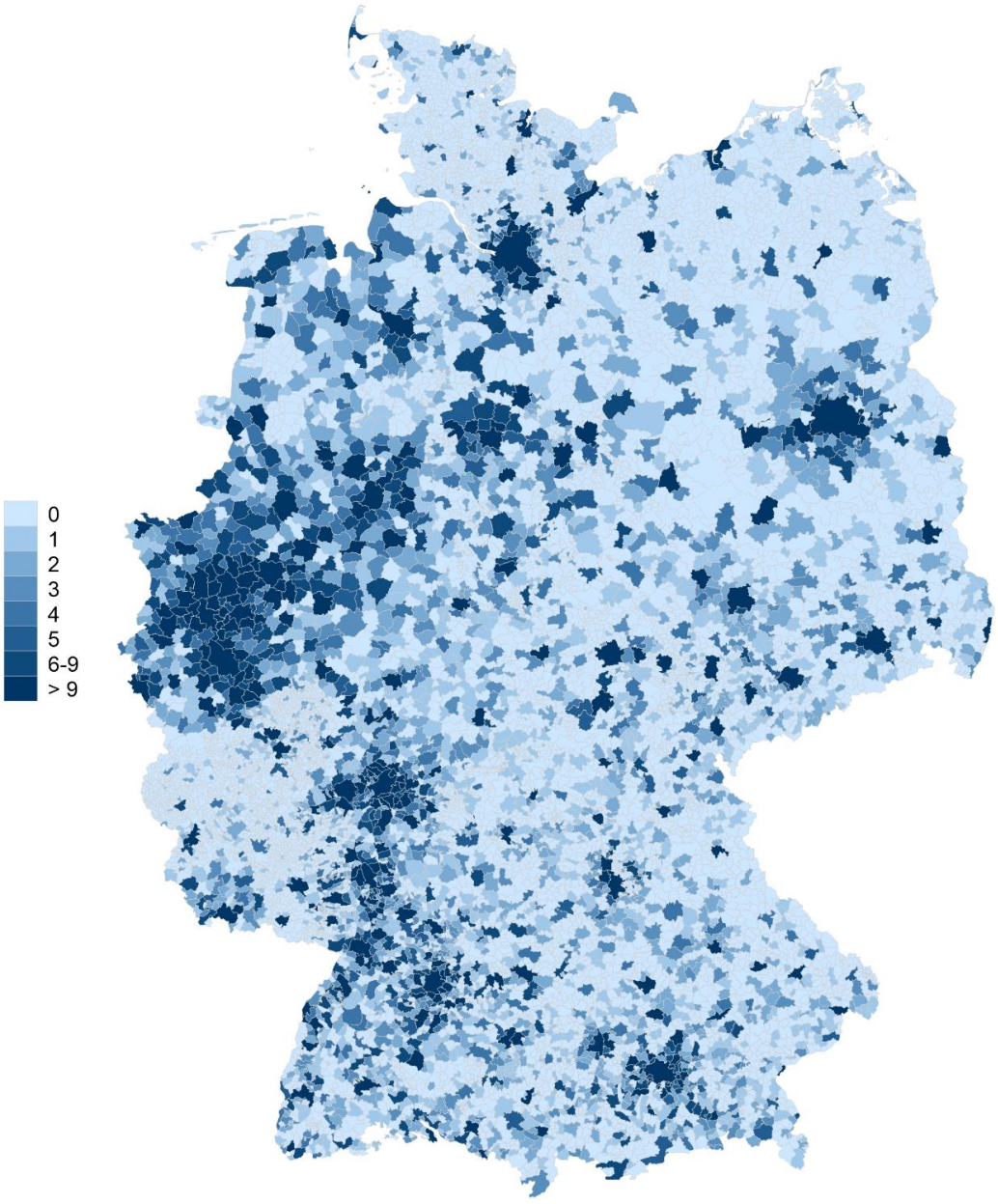

Figure A1 shows the unweighted number of participants by municipality (Gemeinde) in which the business is located. The data is derived from the German Business Panel (GBP), wave 1 (July – October 2020) and wave 2 (November – July 2021). The sample includes 18,766 firm-level observations. These are based on completed interviews only (10,174 in wave 1, 8,570 in wave 2). Two firms could not be assigned to an official municipality key and 24 of those did not indicate their legal form. The maximum number

of approx. 1,164 observations are from Berlin. The figure uses the following variable from the GBP: AGS (see the GBP Codebooks in Appendix C for more information).

A unique feature of the dataset is its rolling cross-section design. As we add survey waves, this design is being extended to a fully-fledged rolling panel. Figure A2 shows the principle behind the rolling cross-section design. We randomly group firms into 20 groups assigned to 20 field days. Each day (except on weekends) we sent invitations to participate in the survey to one of the groups. We sent the first reminder after seven days and the second one after 14 days. In Figure A2, we indicate the day of record along the horizontal axis and show the share of completed surveys for each day and each daily set of invitations on the vertical axis. One third of firms reacts immediately to our invitation emails (often at 7 am). However, the reminders also play an important role as each of them increases the share of completed surveys again by roughly another 1/3.

The main advantage of the rolling cross-section design is that it allows researchers to track variables over time at a high frequency, implying that time series-like evaluations are feasible during a single survey wave. This is particularly relevant for the identification of relevant events, short-term trends, and recurring patterns, providing timely information for policy making.

Figure A2: Rolling Cross-Section Design

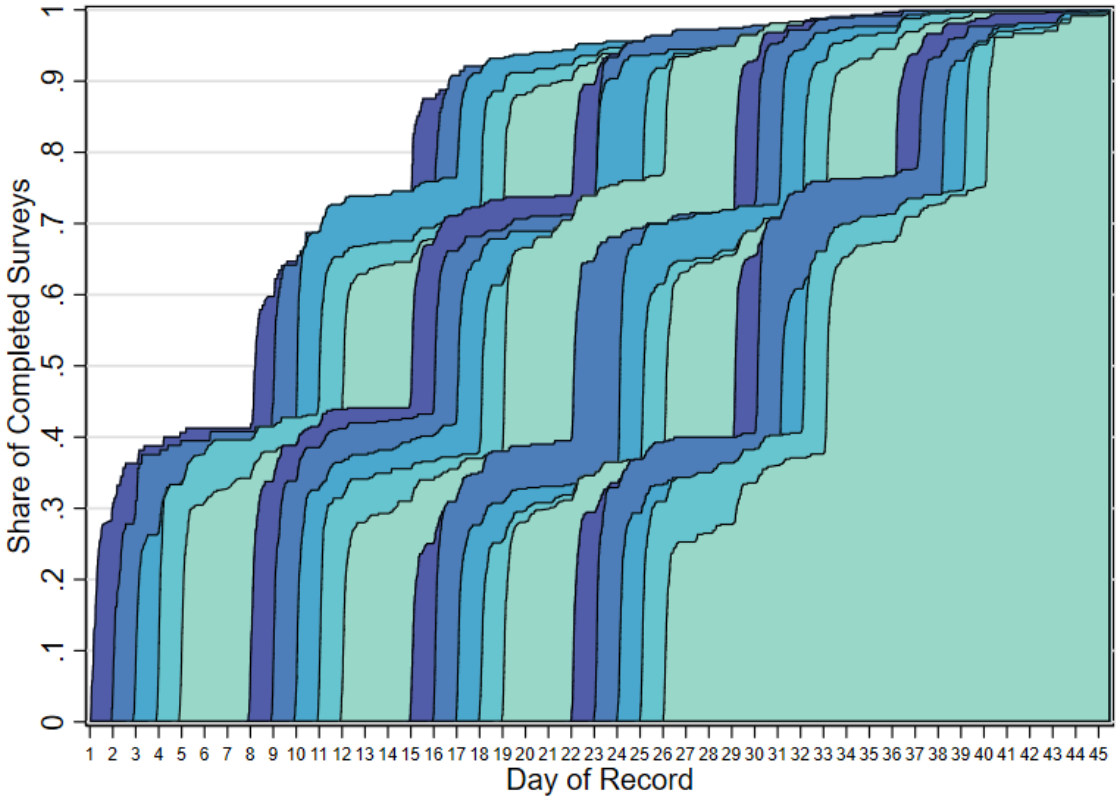

Figure A2 shows the cumulative distribution of the time of record by day of invitation. No invitations have been sent on weekends. Seven (fourteen) days after initial invitation the first (second) reminder has been sent. The sending of invitations has started on June 6, 2020, and the last set of invitation was sent on July 31, 2020. The last reminder was sent on August 14, 2020. We sent a thank you message on October 23, 2020. The data is derived from the German Business Panel (GBP), wave 1 (July – October 2020). The sample includes 10,712 firm-level observations. The figure uses the following variable from the GBP: recorded Date (see the GBP Codebooks in Appendix C for more information).

B. Conceptualizing and Addressing Biases

B.1 Comparison of Respondents and Non-Respondents

To assess how much of a concern unit non-response is, we distinguish in the set of 949,463 firms with available email contact information in the Orbis 2019 database those firms which completed the first GBP survey (Respondents) versus all other firms in this set (Non-Respondents). For many German firms, Orbis contains only contact information, while financial information is available for a much smaller share of firms.[4] For the Orbis reference group of non-respondents, data on key financial information is available for 10.7% (operating revenue) to 12.8% (total assets) of the 939,289 firms. Therefore, if there are no systematic response biases, we expect this information to be available for similar shares in the GBP.

We shed light on potential response biases in the table below which compares whether various relevant variables are observable for the Orbis reference group of non-respondents compared to the sample of 5,852 survey firms which have not objected to their information being linked to context data such as Orbis. That is, we use the same information source (Orbis) for both groups to evaluate whether they differ along observable characteristics like revenue, equity ratio, total assets, number of employees, and firm age. The table reports medians and the share of firms with non-missing data. Equity ratio in is defined as the ratio between shareholder funds divided by total assets. Revenues are measured as operating revenues. The two groups are generally similar, even though GBP respondents appear to be slightly smaller and younger companies.

Table B1. Comparison of GBP respondents and non-respondents (Orbis 2019 data)

	Non-Respondents Orbis Reference Group (2019)	Respondents GBP Wave 1

[4] See Beuselinck et al. (2021) for more information on data availability in the European reporting environment.

			(Unweighted)	
	Median	Share (%)	Median	Share (%)
Operating Revenues	840,000	10.7	607,940	15.9
Equity Ratio	0.429	12.5	0.4684	14.1
Total Assets	1,024,521	12.8	848,054	14.3
Number of Employees	5	40.6	4	50.0
Firm Age	18	99.3	14	99.5
Observations		939,289	Respondents for which data may be linked: 5,852	

Source: Table A1 shows the percentage of firms, for which financial data is available for the reporting year 2019 for the Orbis reference group of non-respondents compared to the respondents in the GBP sample which have not disagreed to having their information linked to context data. We compare the GBP respondents with the non-respondents to see whether they differ along observable characteristics like revenues, equity ratio, total assets, number of employees, and firm age. Equity ratio is defined as the ratio between shareholder funds divided by total assets. Revenues are measured as operating revenues. The data for both groups (the Orbis Reference Group and the respondents to GBP Wave 1) are taken from Orbis 2019 data.

B.2 Conceptualizing Different Types of Biases

To illustrate the consequences of a mismeasured variable (Section 4.2) in a simple bivariate regression, consider the case of classical measurement error. The coefficient β captures the degree to which a regressor influences an outcome variable y_i.

$$y_i = \beta x_i^* + u_i,$$

where x_i^* denotes the true but unobserved regressor with variance $\sigma^2_{x_i^*}$. Instead we observe this value with an independent error η_i with variance σ^2_η: $x_i = x_i^* + \eta_i$. The OLS estimate $\hat{\beta}_x$ using x_i as a regressor is attenuated by the noise-to-signal ratio $\sigma^2_\eta / \sigma^2_{x_i^*}$, such that $0 < \hat{\beta}_x \leq \beta$.[5]

To see how the types of non-response discussed above and in Sections 4.3 and 4.4 can lead to selection bias, consider a variable of interest y_i for respondent i. A set of observable characteristics Z_i, for example the position in the firm, gender, or education, and unobservable traits, like communicativeness, curiousness, cautiousness and preferences, like time use, v_i determine,

[5] Measurement error in the dependent variable would not lead to bias but inflate the standard error of regression.

whether a respondent answers. γ is a coefficient that measures how much response behavior depends on characteristics Z_i.

$$y_i > 0 \text{ iff } v_i < Z_i\gamma$$
$$y_i = \ . \text{ iff } v_i \geq Z_i\gamma$$

Of interest to the researcher is the relationship between outcome variable y_i and observable determinants X_i and unobservable factors u_i, with $E(u_i) = 0$. The coefficient β captures the degree to which the determinants influence y_i.

$$y_i = X_i\beta + u_i$$

Fossen et al. (2020) summarize the result that if v_i is either standard normally (as in Heckman, 1979) or uniformly distributed (as in Olsen, 1980), the problem amounts to an omitted variable problem. If there is knowledge about Z, one can, for example, using an instrumental variable strategy, correct for this bias. Often, this is not the case.

B.3 Additional Comparison with Other Data Sources

To complement the presented comparisons between other data sources and the GBP with respect to certain variables in Section 4.1, we here present a comparison that is based on a question eliciting risk aversion on an 11-point Likert scale. The same question is available for the subset of sole proprietors in the Socio-Economic Panel. The comparison of this group's risk-aversion to the GBP respondents in Table 3 reveals that, compared to the general population of Germany, both groups are less frequently risk averse and more frequently risk loving (Wagner et al., 2007, Goebel et al., 2019). However, when comparing the GBP responses to the SOEP responses, both a nonparametric Wilcoxon-Mann-Whitney rank-sum test and a Kolmogorov-Smirnov test

resoundingly reject an equality of distributions (p-values <0.001). The sole proprietors in the SOEP are significantly less risk averse than the company representatives in the GBP. The SOEP represents mainly self-employed individuals, including entrepreneurial businesses like start-ups or architects, lawyers, tax advisors, pharmacists, crafts persons which typically run firms with a relatively small number of employees. Moreover, the SOEP is known to underrepresent high-income entrepreneurs (Schröder et al. 2020). In contrast the GBP includes a higher share of companies that are large in terms of employees and revenues.

Table B2: Risk Aversion in the GBP and in the SOEP

	GBP Covid-19 Survey (unweighted)	GBP Covid-19 Survey (weighted)	SOEP (2019) (unweighted)	SOEP (2019) (weighted)
Extremely risk averse	3.2	3.9	1.0	0.5
Most risk averse	3.3	3.8	1.7	2.2
Very much risk averse	9.7	10.1	4.4	5.7
Very risk averse	12.7	12.5	6.6	9.6
Risk averse	8.3	7.8	6.0	7.4
Risk neutral	20.5	20.9	15.0	15.5
Risk loving	11.7	11.1	12.4	12.0
Very risk loving	14.4	13.4	18.3	18.1
Very much risk loving	11.1	11.3	19.6	18.4
Most risk loving	2.5	2.4	8.5	6.8
Extremely risk loving	2.6	2.8	6.5	3.9

Table B2 reports the respondents' degree of risk aversion (Likert scale from extremely risk averse to extremely risk loving). The data is derived from the German Business Panel (GBP), wave 1 (July – October 2020), and the Socio-Economic Panel (SOEP), Version 36 (2019, 10.5684/soep.core.v36eu). The sample includes 10,152 firm-level observations in the GBP and 2,689 observations of sole proprietors in the SOEP. The data is weighted using the weights provided by the GBP. The table uses the following variable from the GBP: ccgic4 (see the GBP Codebooks in Appendix C for more information).

C. Codebooks of GBP survey waves 1 and 2

The original codebooks are attached on the subsequent pages.

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ACCOUNTING FOR TRANSPARENCY

German Business Panel

Version 3.1 (22.11.2021)

German Business Panel

Uncertainty, Firm Investments, Employment, Survival and Fiscal Policy During and Beyond the COVID-19 Crisis

Codebook: Round 1

Bischof | Simons | Voget | Dörrenberg | Rostam-Afschar | Buhlmann | Akari | Arnemann | Eble | Gharbi | Karlsson

Das German Business Panel ist ein langfristiges Befragungspanel des DFG-geförderten überregionalen Projektes „Accounting for Transparency“

DFG Deutsche Forschungsgemeinschaft

UNIVERSITÄT MANNHEIM

Mit Unterstützung vom ZEW

Overview & Example

Brief summary

The COVID-19 crisis is arguably one of the greatest concerns of firms in Germany in these days. Therefore, the German Business Panel developed a survey to ask a representative sample of firms in Germany about their perceived economic uncertainty, their investment and employment plans. We also asked about expectations about firm survival, take-up of government support, and managerial strategies to mitigate the impact of the COVID-19 crisis. The questionnaire was launched on the 6th July 2020 and closed on the 3rd October 2020.

Structure

The codebook mainly follows the order of questions in the survey. This is done to illustrate which questions were asked before or after the two different information treatments in the survey (See Section Experiment 1 and Experiment 2).

Variable names

Variable names are indicated in the top row of each question summary. In case the question has multiple items, the items are indicated by a number. Variable names are provided along with English labels.

Coding (incl. missing convention)

The coding of the variables indicates the variable range.

-9999	dropout	-9998	refusal
-9997	don't know	-9996	does not apply

Variable type

Types of variables can be **string** or **numeric**.

Filtering

Filters and conditional redirects are provided. If questions are presented to all respondents, this is not explicitly stated.

Example

Variable name	cun3
Original survey question	Erwarten Sie, dass es vor dem Ende der Krise noch zu einer zweiten Welle an Infektionen kommt?
English translation of survey question	Do you expect a second wave of infections before the end of the crisis?
Variable label	Expectation: second wave
Variable type	numeric
Range	[0,1] 0 = No 1 = Yes
Filter	None

Contents

Survey Questions

Opening	**Vielen Dank, dass Sie sich bereiterklärt haben, an unserer Befragung teilzunehmen** Ihre Mitarbeit an dieser Befragung ist für die Aussagekraft unserer Studie ausgesprochen wichtig. Die Befragung kann jederzeit unterbrochen werden und durch erneutes Klicken auf Ihren persönlichen Link an derselben Stelle fortgesetzt werden. Bitte beantworten Sie die Fragen aus der Sicht Ihres Unternehmens. **Informationen zum Datenschutz** Ihre Angaben werden selbstverständlich streng vertraulich nach EU-Datenschutz-Grundverordnung (DSGVO) sowie den weiteren Datenschutzgesetzen behandelt. Die forschungsbezogenen Ergebnisse werden ausschließlich in anonymisierter Form in Veröffentlichungen verwendet. Insbesondere möchten wir auf die folgenden Punkte hinweisen: • Alle Befragungsdaten werden ausschließlich zu Forschungszwecken benutzt. Ihre Angaben werden selbstverständlich streng vertrauliche behandelt. • Ihre Teilnahme an unserer Studie ist freiwillig. Mit Ihrer Teilnahme willigen Sie ein, dass Ihre Daten gespeichert, verarbeitet und weitergegeben werden dürfen. • Sie können ihre Einwilligung jederzeit widerrufen. Durch den Widerruf wird die Rechtmäßigkeit der aufgrund der Einwilligung bis zum Widerruf erfolgten Verarbeitung nicht berührt. • Die forschungsbezogenen Ergebnisse werden ausschließlich in anonymisierte und aggregierter Form in Veröffentlichungen verwendet, so dass keine Rückschlüsse auf Ihre Person sowie Ihr Unternehmen möglich sind • Ausführliche Informationen erhalten Sie in unserer Erklärung zum Datenschutz ☐ Ja, ich habe die Datenschutzhinweise gelesen, verstanden, und willige in die Teilnahme am Forschungsprojekt und die damit verbundene Datenverarbeitung ein.

Variable name	gbpid
Comment	Researchers may use gbpid as the unique identifier to construct a panel dataset.
Variable Label	gbp identification number
Variable type	string

Variable name	BvDID
Comment	Researchers may use BvDID for matching purposes.
Variable Label	bvdid
Variable type	string

Variable name	startDate
Comment	This variable indicates the time when the recipient starts the survey. Example: 24sep2021 11:46:11
Variable label	survey start date
Variable type	date in Stata %tc format

Variable name	endDate
Comment	This variable indicates the time when the recipient finishes the survey. Example: 24sep2021 11:46:11
Variable label	survey end date
Variable type	date in Stata %tc format

Variable name	recordedDate
Comment	This variable implies the time when the answers are uploaded to the server. Example: 24sep2021 11:46:11
Variable label	recorded date
Variable type	date in Stata %tc format

Variable name	ccgic1
Original survey question	Welche Rechtsform hat ihr Unternehmen?
English translation of survey question	What is the legal form of your company?
Variable label	legal form
Variable type	numeric
Comment	If “Other” is selected, the corresponding text entry is stored in variable ccgic1_text (accessible under restrictive conditions).
Range	[1,18] 1 = Einzelunternehmen 2 = GmbH 3 = GmbH & Co. KG 4 = UG 5 = AG 6 = oHG 7 = GbR 8 = PartG 9 = KG 10 = SE 11 = Verein 12 = KGaA 13 = Genossenschaft 14 = Öffentlich-rechtliches Unternehmen 15 = Personengesellschaft 16 = Limited 17 = Stiftung 18 = Other
Filter	None

Variable name	ccgic2
Original survey question	Welches der folgenden Intervalle entspricht am ehesten dem Jahresumsatz Ihres Unternehmens im Jahr 2019?
English translation of survey question	Which of the following intervals correspond most closely to the annual revenue of your company in 2019?
Variable label	annual revenue
Variable type	numeric
Range	[0, ∞)
Filter	None

Variable name	ccgic3
Original survey question	Bitte geben Sie den Jahresumsatz (in EUR) im Jahr 2019 Ihres Unternehmens an.
English translation of survey question	Please indicate the annual revenue (in EUR) of your company in 2019.
Variable label	annual revenue categorical
Variable type	numeric
Comment	Revenues provided in ccgic2 will automatically be translated in the respective category of ccgic3.
Range	[1,14] 1 = Less than 50.000 EUR 2 = 50.000 – 100.000 EUR 3 = 100.001 – 350.000 EUR 4 = 350.001 – 700.000 EUR 5 = 700.001 – 2.000.000 EUR 6 = 2.000.001 – 6.000.000 EUR 7 = 6.000.001 – 8.000.000 EUR 8 = 8.000.001 – 10.000.000 EUR 9 = 10.000.001 – 12.000.000 EUR 10 = 12.000.001 – 20.000.000 EUR 11 = 20.000.001 – 40.000.000 EUR 12 = 40.000.001 – 50.000.000 EUR 13 = 50.000.001 – 60.000.000 EUR 14 = More than 60.000.000 EUR
Filter	Conditional on ccgic2 being empty

Variable name	ccgic5
Original survey question	Wie viele sozialversicherungspflichtige Mitarbeiter (in vollen Stellen) hat Ihr Unternehmen?
English translation of Survey question	How many employees (in full-time) in your firm are subject to social security?
Variable label	number employees
Variable type	numeric
Range	[0,∞]
Filter	None

Variable name	ccgic6
Original survey question	Welches der folgenden Intervalle entspricht am ehesten der Zahl der sozialversicherungspflichtigen Mitarbeiter (in vollen Stellen) in Ihrem Unternehmen?
English translation of the survey question	Which of the following intervals corresponds most closely to the number of full-time employees, subject to social security, in your firm?
Variable label	number employees categorical
Variable type	numeric
Comment	Number of employees provided in ccgic5 will automatically be translated in the respective category of ccgic6.
Range	[1,9] 1 = No employees 2 = 1-5 3 = 6-9 4 = 10-19 5 = 20-49 6 = 50-249 7 = 250-499 8 = 500-999 9 = More than 1000
Filter	Conditional on ccgic5 being empty

Variable name	ccgic11
Variable label	salutation
Variable type	string
Filter	None

Variable name	ccgic12
Variable label	title
Variable type	string
Filter	None

Variable name	ccgic13
Variable label	highest level of education
Variable type	string
Filter	None

Variable name	ccgic14
Variable label	position in the company
Variable type	string
Filter	None

Variable name	ccgic15
Variable label	division in the company
Variable type	string
Filter	None

Variable name	industry_WZ08
Original survey question	Bitte wählen sie den für Ihr Unternehmen bedeutendsten Wirtschaftszweig, in dem Sie aktiv sind, durch die Wahl der zutreffenden Kategorien.
English translation of survey question	Please select the most important industry sector, in which your company is active, by selecting the corresponding category.
Variable label	industry classification
Variable type	numeric
Comment	The variable indicates the most important industry in which the firm is active according to the classification scheme by the German Statistical Office. The level of detail stored corresponds to the specification by the respondents.
Filter	None

Variable name	cdat2
Original survey question	**Unterstützen Sie uns in zukünftigen Befragungen, um die langfristige wirtschaftliche Entwicklung besser verstehen zu können und damit die Rahmenbedingungen für die deutsche Wirtschaft zu verbessern!** Um zu erfahren, wie staatliche Regulierung auf Unternehmen wirkt (gerade aktuell in der Corona-Krise) und wie sie verbessert werden kann, würden wir Sie gerne zu weiteren Befragungen einladen. Dafür benötigen wir für die weitere Verarbeitung Ihrer Kontaktdaten eine Einwilligung. Ihre Kontaktdaten werden getrennt vom Fragebogen ausschließlich für den Zweck weiterer Befragungen aufgehoben. Sie werden niemals mit den von Ihnen angegebenen Antworten in Verbindung gebracht. Ihre Kontaktdaten werden niemals an Dritte weitergegeben. Nach Abschluss der letzten Befragung werden Ihre Kontaktdaten gelöscht. Ausführliche Informationen erhalten Sie in unseren Datenschutzhinweisen nach Art. 13 DSGVO. Wir wären sehr dankbar, wenn wir Sie für das weitere Mitwirken an unserem Forschungsprojekt gewinnen könnten. Selbstverständlich ist dies freiwillig und Sie können die Einwilligung jederzeit widerrufen. Durch den Widerruf wird die Rechtmäßigkeit der aufgrund der Einwilligung bis zum Widerruf erfolgten Verarbeitung nicht berührt.
Variable label	contact agreement
Variable type	numeric
Range	[0,1] 0 = No 1 = Yes
Filter	None

Variable name	cdat3
Original survey question	**Leisten Sie einen Beitrag, um Klarheit über die Situation und Struktur von Unternehmen in Deutschland zu schaffen! Damit kann die Wissenschaft einen Beitrag leisten, die Rahmenbedingungen für die deutsche Wirtschaft zu verbessern.** Um ein vollständiges Bild der Unternehmenslandschaft in Deutschland zu etablieren, möchten wir die erhobenen Umfragedaten mit Daten aus getrennt vorliegenden Unternehmensdatenbanken oder mit auf Webseiten frei zugänglichen Daten verknüpfen. Dies können beispielsweise Informationen zum Wirtschaftszweig und zu weiteren Strukturinformationen Ihres Unternehmens sein. Für die Verknüpfung dieser Daten mit den Befragungsdaten benötigen wir Ihre Einwilligung. Die datenschutzrechtlichen Hinweise finden Sie in unserer Erklärung zum Datenschutz. Veröffentlichungen der anonymisierten Ergebnisse von Analysen der verknüpften Daten erlauben keine Rückschlüsse auf Ihre Person oder Ihr Unternehmen. Wir freuen uns sehr, wenn Sie uns dabei unterstützen, die Erwartungen und Einschätzungen der Unternehmen in Deutschland besser zu verstehen. Ihre Einwilligung ist natürlich freiwillig. Sie können sie jederzeit widerrufen. Durch den Widerruf wird die Rechtmäßigkeit der aufgrund der Einwilligung bis zum Widerruf erfolgten Verarbeitung nicht berührt.
Variable label	data linking agreement
Variable type	numeric
Range	[0,1] 0 = No 1 = Yes
Filter	None

Variable name	AGS
Comment	The AGS (amtlicher Gemeindeschlüssel), issued by the German Statistical Office identifies the municipality of the company (accessible under restrictive conditions).
Variable label	official municipality code
Variable type	string
Filter	None

Variable name	weight
Comment	This variable indicates the sampling weights with regard to each observation. The sampling weights are calculated by raking algorithms. For further information please consult the relevant documentation on the GBP website.
Variable label	sampling weight
Variable type	numeric
Filter	None

Variable name	wave
Comment	This variable indicates the survey wave.
Variable label	survey wave
Variable type	string
Filter	None

Variable name	ccd1-ccd8	
Original survey question	In welchem Ausmaß wurden die folgenden Kennzahlen durch die Corona-Krise beeinflusst? Bitte geben Sie an, um wie viel Prozent sich die Kennzahlen aktuell im Vergleich zum 31.01.2020 verändert haben.	
English translation of survey question	To what extent were the following key figures impacted by the Corona crisis? Please indicate by what percentage the following key figures have changed compared to 31.01.2020.	
Variable label	ccd1	revenue impact
	ccd2	no. of employees impact
	ccd3	liquidity impact
	ccd4	liabilities impact
	ccd5	accounts receivable impact
	ccd6	net income impact
	ccd7	accruals impact
	ccd8	access to production inputs impact
Variable type	numeric	
Range	[-100,100]	
Filter	None	

Variable name	cun1
Original survey question	Was schätzen Sie: An welchem Datum wird das öffentliche Leben in Deutschland aufgrund der Corona-Krise nicht mehr eingeschränkt sein?
English translation of survey question	Please give an estimate: On which date will public life in Germany no longer be restricted due to the Corona crisis?
Variable label	Expectation: date end of restrictions
Variable type	string (“yyyy-mm-dd”)
Comment	The earliest possible date entry equals the start date of the survey.
Range	≥ 2020-07-06
Filter	None

Variable name	cun2
Original survey question	Wie sicher sind Sie sich bezüglich des von Ihnen angegebenen Datums?
English translation of survey question	How certain are you with respect to the date you provided?
Variable label	Certainty: end of restrictions
Variable type	numeric
Range	11 Point Likert Scale [0,10] 0 = very unsecure 10 = very secure
Filter	Conditional on valid entry for cun1

Variable name	cun3
Original survey question	Erwarten Sie, dass es vor dem Ende der Krise noch zu einer zweiten Welle an Infektionen kommt?
English translation of survey question	Do you expect a second wave of infections before the end of the crisis?
Variable label	Expectation: second wave
Variable type	numeric
Range	[0,1] 0 = No 1 = Yes
Filter	None

Variable name	cun4
Original survey question	Was schätzen Sie: An welchem Datum wird die zweite Welle beginnen?
English translation of survey question	Please give an estimate: On which date will the second wave begin?
Variable label	Expectation: start of second wave
Variable type	string (“yyyy-mm-dd”)
Comment	The earliest possible date entry equals the start date of the survey.
Range	≥ 2020-07-06
Filter	Conditional on cun3=1

Variable name	cun5
Original survey question	Was schätzen Sie: Wann werden die monatlichen Umsätze Ihres Unternehmens wieder so hoch sein wie zum Zeitpunkt vor der Corona-Krise?
English translation of survey question	Please give an estimate: when will the monthly revenue of your company reach its pre-corona crisis levels?
Variable label	Expectation: revenue recovery
Variable type	numeric
Comment	If 1 is selected, the date entry is stored in the variable cun5_date.
Range	[1,3] 1 = on (see var cun5_date) 2 = already recovered 3 = never
Filter	Conditional on ccd1<0

Variable name	cun5_date
Original survey question	Was schätzen Sie: Wann werden die monatlichen Umsätze Ihres Unternehmens wieder so hoch sein wie zum Zeitpunkt vor der Corona-Krise?
English translation of survey question	Please give an estimate: when will the monthly revenue of your company reach its pre-corona crisis levels?
Variable label	Expectation: date of revenue recovery
Variable type	string (“yyyy-mm-dd”)
Comment	The earliest possible date entry equals the start date of the survey.
Range	≥ 2020-07-06
Filter	Conditional on cun5=1

Variable name	cun6
Original survey question	Wie sicher sind Sie sich, dass die Umsätze Ihres Unternehmens an dem von Ihnen angegebenen Datum so hoch sein werden wie vor der Corona-Krise?
English translation of survey question	How certain are you that monthly revenues will reach pre-corona crisis levels at the date you indicated?
Variable label	Certainty: revenue recovery
Variable type	numeric
Range	11 Point Likert Scale [0,10] 0 = very insecure 10 = very secure
Filter	Conditional on cun5=1

Variable name	cun7
Original survey question	Wie sicher sind Sie sich, dass die Umsätze Ihres Unternehmens nie wieder so hoch sein werden wie vor der Corona-Krise?
English translation of survey question	How confident are you that your revenues will never reach their pre-corona crisis levels?
Variable label	Certainty: revenue deterioration
Variable type	numeric
Range	11 Point Likert Scale [0,10] 0 = very insecure 10 = very secure
Filter	Conditional on cun5=3

Variable name	cgm1-cgm10	
Original survey question	Welche nicht-steuerlichen staatlichen Mittel/Maßnahmen beanspruchen Sie aufgrund der Corona-Krise? Mehrfachnennungen sind möglich.	
English translation of survey question	Which non-tax related government measures have you claimed due to the corona crisis? Multiple answers are possible.	
Variable label	cgm1	Corona emergency relief
	cgm2	interim aid
	cgm3	short-term work/allowance
	cgm4	guarantees/sureties
	cgm5	credit authorization
	cgm6	refinancing of existing KfW credits
	cgm7	KfW special program
	cgm8	simplified access security benefits
	cgm9	others
	cgm10	no measures requested/received
Variable type	numeric	
Comment	If cgm9 is selected, the text entry is stored in the variable cgm9_text (accessible under restrictive conditions).	
Range	[0,1] 0 = No 1 = Yes	
Filter	None	

Variable name	cgm11-cgm19	
Original survey question	Welche der folgenden steuerlichen Maßnahmen beansprucht Ihr Unternehmen im Rahmen der Corona-Krise? Mehrfachnennungen sind möglich.	
English translation of survey question	Which tax related measures have you claimed due to the corona crisis? Multiple answers are possible.	
Variable label	cgm11	refund tax prepayment for 2020
	cgm12	immediate loss carryback
	cgm13	deferral tax payments
	cgm14	suspension enforcement measures
	cgm15	taxation corporate tax
	cgm16	deferral of import turnover tax
	cgm17	reintroduction degressive depreciation
	cgm18	others
	cgm19	no measures requested/received
Variable type	numeric	
Comment	If cgm18 is selected, the text entry is stored in the variable cgm18_text (accessible under restrictive conditions).	
Range	[0,1] 0 = No 1 =Yes	
Filter	cgm15 conditional on ccgic1=1 or ccgic1=3 or ccgic1=6 or ccgic1=7 or ccgic1=9 or ccgic1=18	

Variable name	cgm20
Original survey question	Hätte Ihr Unternehmen die Corona-Krise auch überstanden, ohne staatliche Mittel oder Maßnahmen zu beanspruchen?
English translation of survey Question	Would your company have survived the corona crisis without taking up any governmental measures?
Variable label	Expectation: survival without governmental measures
Variable type	numeric
Range	[0,1] 0 = No 1 = Yes
Filter	Conditional on cgm10=0 or cgm19=0

Variable name	cps1
Original survey question	Haben Sie bereits seit dem 01. Juli Preise geändert oder planen Sie, Preise für Ihre Endprodukte vor dem 31. Dezember 2020 zu ändern?
English translation of survey question	Have you already changed prices since July 1st or do you plan to change prices for your end products before December 31st, 2020?
Variable label	tax-related price changes
Variable type	numeric
Comment	This variable aims to capture firm reactions to the temporary Value Added Tax (VAT) reduction in Germany from July 1st to December 31st, 2020.
Range	[0,1] 0 = No 1 = Yes
Filter	None

Variable name	cps2
Original survey question	Um wie viel Prozent haben Sie bereits bzw. wollen Sie die Preise für Ihre Endprodukte zwischen dem 01. Juli und 31. Dezember 2020 ändern?
English translation of survey question	By how much have you changed or are you planning to change the prices of your products between July 1st and December 31st, 2020?
Variable label	tax-related percentage price change
Variable type	numeric
Comment	This variable indicates by how much firms plan to increase their prices with respect to the VAT increase. Variable cps2 is set to 0, if cps1=0.
Range	[-50,100]
Filter	Conditional on cps1=1

Experiment 1: Governmental Measures

The survey participants randomly receive either one of the information treatments described in this section or no additional information (Control Group). After the information treatment, all survey participants receive the same survey questions.

Note: The codebook follows the order of questions in the survey. Consequently, all variables prior to this section (Section 3) in the codebook have been asked before recipients received any information treatment. Answers to questions in the following section may be influenced by the different information treatments explained in this section.

Variable name	exp1
Variable label	experiment 1
Variable type	numeric
Comment	exp1 indicates which information treatment the survey participant received. exp1 also includes information on whether the question concerning cte24 was seen or not.
Range	[1,3] 1 = Control 2 = Information Treatment 1 3 = Information Treatment 2

Experiment 1: Control Group
No additional information was displayed to the survey participants

Experiment 1: Information Treatment 1

Original Text	**Hintergrundinformation:** Der Bund hat im Rahmen des im Juni beschlossenen Konjunkturprogramms Unterstützung in Höhe von 130 Milliarden Euro zugesagt. Die erhöhten Staatsausgaben und zusätzlichen Schulden, die im Zuge der Corona-Krise entstanden, könnten künftig höhere Staatseinnahmen oder Ausgabenkürzungen notwendig machen. Nach der Finanzkrise 2008/2009 wurden beispielsweise in vielen europäischen Ländern die Steuersätze angehoben. Vertreter der CDU haben bereits angekündigt, dass die Schulden, die durch die Corona-Krise angefallen sind, bis 2030 wieder abgebaut werden sollen.
English translation	**Background information:** The federal government has pledged support of €130 billion as part of the economic stimulus package adopted in June. The increased government spending and additional debt incurred in the wake of the Corona crisis could necessitate higher government revenues or spending cuts in the future. After the 2008/2009 financial crisis, for example, tax rates were raised in many European countries. Representatives of the CDU have already announced that the debt incurred as a result of the Corona crisis will be reduced again by 2030.

Experiment 1: Information Treatment 2

Original Text	**Hintergrundinformation:** Viele Unternehmen sind durch die Corona-Krise unverschuldet in Not geraten, so ist zum Beispiel im Gastgewerbe der Umsatz im Vergleich zum Vorjahresmonat um 75,8 Prozent eingebrochen. Der Bund hat im Rahmen des im Juni beschlossenen Konjunkturprogramms Unterstützung in Höhe von 130 Milliarden Euro zugesagt.
English translation	**Background Information:** Many companies have experienced hardship through no fault of their own as a result of the Corona crisis, with sales in the hospitality industry, for example, plummeting 75.8 percent compared to the same month last year. The federal government has pledged support of 130 billion euros as part of the economic stimulus package adopted in June. result of the Corona crisis will be reduced again by 2030.

Survey Questions following Experiment 1

Note: Answers to questions in this section of the codebook may be influenced by the information treatment received in Experiment 1.

Variable name	cte24
Original survey question	Halten Sie es für gerechtfertigt, dass die Regierung mit diesem Konjunkturpaket auf Kosten der Steuerzahler eingreift?
English translation of survey question	Do you think it is justified for the government to intervene with this stimulus package at the taxpayer's expense?
Variable label	opinion stimulus package
Variable type	numeric
Comment	Experiment 1: Information Treatment 1 This question was only displayed to 50% of respondents in the Experiment 1: Information Treatment 1 group. The other 50% are coded as -9996 (does not apply). Experiment 1: Control Group This question was only implemented for the control group starting from 29th July. Responses from participants in the Experiment 1: Control Group prior to this date is coded as -9996 (does not apply).
Range	[1,5] 1 = not justified at all 2 = not justified 3 = not justified nor unjustified 4 = justified 5 = totally justified
Filter	None

Variable name	cta1-cta6	
Survey question	Welche Veränderungen in den folgenden Steuersätzen erwarten Sie kurzfristig (0-12 Monate) ausgehend von Ihrem gegenwärtigen Steuersatz? Bitte geben Sie Ihre Erwartung in Prozentpunkten an.	
English translation of survey question	What changes in the following tax rates do you expect in the short term (0-12 months) based on your current tax rate? Please state your expectation in percentage points.	
Variable label	cta1	Expectation: corporate tax short-term
	cta2	Expectation: local business tax short-term
	cta3	Expectation: income tax short-term
	cta4	Expectation: social security contribution short-term
	cta5	Expectation: solidarity surcharge short-term
	cta6	Expectation: capital gains tax short-term
Variable type	numeric	
Range	[-20,20]	
Filter	None	

Variable name	cta7-cta12	
Survey question	Welche Veränderungen in den folgenden Steuersätzen erwarten Sie mittelfristig (12-24 Monate) ausgehend von Ihrem gegenwärtigen Steuersatz? Bitte geben Sie Ihre Erwartung in Prozentpunkten an.	
English translation of survey question	What changes in the following tax rates do you expect in the medium term (12-24 months) based on your current tax rate? Please state your expectation in percentage points.	
Variable label	cta7	Expectation: corporate tax medium-term
	cta8	Expectation: local business tax medium-term
	cta9	Expectation: income tax medium-term
	cta10	Expectation: social security contribution medium-term
	cta11	Expectation: solidarity surcharge medium-term
	cta12	Expectation: capital gains tax medium-term
Variable type	numeric	
Range	[-20,20]	
Filter	None	

Variable name	cta13-cta18	
Survey question	Um wieviel Prozentpunkte würden Sie aus Sicht Ihres Unternehmens die folgenden Steuerarten ausgehend von Ihrem gegenwärtigen Steuersatz anpassen wollen, damit die Regierung in der Lage ist, Unternehmen in Krisen zu unterstützen?	
English translation of survey question	From your company's point of view, by how many percentage points would you want to adjust the following types of taxes based on your current tax rate so that the government is able to support companies in crises?	
Variable label	cta13	adjustment corporate tax
	cta14	adjustment local business tax
	cta15	adjustment income tax
	cta16	adjustment social security contribution
	cta17	adjustment solidarity surcharge
	cta18	adjustment capital gains tax
Variable type	numeric	
Range	[-20,20]	
Filter	None	

Variable name	cct26-cct27	
Survey question	Was erwarten Sie: Um wieviel Prozent verändert sich das Bruttoinlandsprodukt (BIP) in den Jahren 2020 und 2021 im Vergleich zum jeweiligen Vorjahr?	
English translation of survey question	What do you expect: By what percentage will the gross domestic product (GDP) change in the years 2020 and 2021 compared to the respective previous year?	
Variable label	cct26	Expectation: GDP growth 2019-2020
	cct27	Expectation: GDP growth 2020-2021
Variable type	numeric	
Range	[-10,10]	
Filter	None	

Experiment 2: Economic Recovery Forecast

The survey participants randomly receive either one of the information treatments described in this section or no additional information (Control Group). After the information treatment, all survey participants receive the same survey questions.

Note: The codebook follows the order of the questions in the survey. Consequently, all variables prior to this section in the codebook have been asked before recipients received any of the information treatments outlined in this section (Section 5). Answers to survey questions after this section may be influenced by the different information treatments explained in this section or by information treatments received in Experiment 1.

Variable name	exp2
Variable label	experiment 2
Variable type	numeric
Comment	exp2 indicates which information treatment the survey participant received.
Range	[1,4] 1 = Control 2 = Information Treatment 1 3 = Information Treatment 2 4 = Information Treatment 3

Experiment 2: Control Group
No additional information was displayed to the survey participants

Experiment 2: Information Treatment 1

Original Text	Hintergrundinformation: Der Sachverständigenrat hat aufgrund der Corona-Krise seine Prognose für die Entwicklung des Wirtschaftswachstums angepasst. In einem der berechneten Szenarien geht der Sachverständigenrat davon aus, dass sich Deutschland ähnlich wie China sehr schnell von der Krise erholen wird. Der Sachverständigenrat hat errechnet, dass das BIP 2020 um 2.8 % fallen wird. 2021 wird es zu Aufholeffekten kommen, die zu einem Wirtschaftswachstum von 3.7 % führen werden.
English translation	Background information: The German Council of Economic Experts has adjusted its forecast for the development of economic growth as a result of the Corona crisis. In one of the scenario-forecasts, the Council of Experts expect that Germany, like China, will quickly recover from the crisis. The Council of Experts has calculated that GDP will fall by 2.8% in 2020. In 2021, there will be catch-up effects, leading to economic growth of 3.7%.
Comment	Information treatment 1 also included a graphic. See appendix.

Experiment 2: Information Treatment 2

Original Text	**Hintergrundinformation:** Der Sachverständigenrat hat aufgrund der Corona-Krise seine Prognose für die Entwicklung des Wirtschaftswachstums angepasst. In einem der berechneten Szenarien geht der Sachverständigenrat davon aus, dass die deutsche Wirtschaft sich sehr langsam von den Folgen der Corona-Krise erholt und die getroffenen Maßnahmen die Krise nicht hinreichend abfedern. Aufgrund von negativen Feedbackeffekten wird die Wirtschaft die Verluste, die durch die Corona-Krise entstanden sind, auch im Jahr 2021 nicht aufholen können. Der Sachverständigenrat prognostiziert, dass die Wirtschaft im Jahr 2020 um 4.5% schrumpfen wird. Im Jahr 2021 wird es zu einem stagnierendem Wirtschaftswachstum in Höhe von 1% kommen
English translation	**Background information:** The German Council of Economic Experts has adjusted its forecast for the development of economic growth as a result of the Corona crisis. In one of the scenarios-forecasts, the Council of Experts expect that the German economy will recover slowly from the consequences of the Corona crisis and that the measures taken will not sufficiently cushion the crisis. Due to negative feedback effects, the economy will not be able to make up for the losses caused by the Corona crisis even in 2021. The Council of Economic Experts forecasts that the economy will decrease by 4.5% in 2020. In 2021, economic growth will stagnate at 1%.
Comment	Information treatment 2 also included a graphic. See appendix.

Experiment 2: Information Treatment 3

Original Text	**Hintergrundinformation:** Der Sachverständigenrat hat im Kontext der Corona-Krise verschiedene Prognosen für die Entwicklung des Wirtschaftswachstums vorgelegt. In einem der Szenarien verläuft die wirtschaftliche Erholung sehr schnell (Orange). In einem anderen Szenario geht der Sachverständigenrat davon aus, dass die wirtschaftliche Erholung sehr langsam geschieht (Lila). Es ist derzeit unsicher, welches dieser Szenarien sich realisiert. Darüber hinaus sind sich Wissenschaftler auch nicht einig in der Prognose, ob Deutschland von einer zweiten Infektionswelle betroffen sein wird.
English translation	**Background information:** In the context of the Corona crisis, the German Council of Economic Experts has presented various forecasts for the development of economic growth. In one of the scenarios, the economy recovers quickly (orange). In another scenario, the Council of Economic Experts expect that the economy recovers slowly (purple). It is currently uncertain which of these scenarios will materialize. Furthermore, scientists also disagree on the forecast of whether Germany will be affected by a second wave of infections.
Comment	Information treatment 3 also included a graphic. See appendix.

Survey Questions following Experiment 1 & Experiment 2

Note: Answers to questions in this section of the codebook may be influenced by the information treatment received in Experiment 1 and (or) Experiment 2.

Variable name	cun8
Original survey question	Wie groß ist die Unsicherheit, die sich aus der Corona-Krise für die Geschäfte Ihres Unternehmens ergibt?
English translation of survey question	How great is the uncertainty resulting from the Corona crisis for the business of your company?
Variable label	Uncertainty: Corona crisis
Variable type	numeric
Range	[0,100]
Filter	None

Variable name	cin1
Original survey Question	Planen Sie derzeit, kurzfristig (0-12 Monate) Investitionen zu tätigen?
English translation of survey question	Are you currently planning to make short-term (0-12 months) investments?
Variable label	investment short-term
Variable type	numeric
Range	[0,1] 0 = No 1 = Yes
Filter	None

Variable name	cin2
Original survey Question	Planen Sie derzeit, mittelfristig (12-24 Monate) Investitionen zu tätigen?
English translation of survey question	Are you currently planning to make medium-term (12-24 months) investments?
Variable label	investment medium-term
Variable type	numeric
Range	[0,1] 0 = No 1 = Yes
Filter	None

Variable name	cin3-cin6	
Original survey Question	Welche Arten von Investitionen planen Sie kurzfristig (0-12 Monate) zu tätigen?	
English translation of survey question	Which type of investment are you planning to undertake in the short term (0-12 months)?	
Variable label	cin3	real investment short-term
	cin4	intangible investment short-term
	cin5	financial investment short-term
	cin6	other investment short-term
Variable type	numeric	
Comment	If firms do not plan any short-term investments, cin3 to cin6 are automatically set to 0.	
Range	[0,1] 0 = No 1 = Yes	
Filter	Conditional on cin1=1	

Variable name	cin7-10	
Original survey Question	Welche Arten von Investitionen planen Sie mittelfristig (12-24 Monate) zu tätigen?	
English translation of survey question	Which type of investment are you planning to undertake in the medium term (12-24 months)?	
Variable label	cin7	real investment medium-term
	cin8	intangible investment medium-term
	cin9	financial investment medium-term
	cin10	other investment medium-term
Variable type	numeric	
Comment	If firms do not plan any medium-term investments, cin7 to cin10 are automatically set to 0.	
Range	[0,1] 0 = No 1 = Yes	
Filter	Conditional on cin2=1	

Variable name	cin11
Original survey question	Welchen Anteil Ihres in 2019 erwirtschafteten Umsatzes (in %) möchten Sie kurzfristig (0-12 Monate) investieren?
English translation of survey question	What percentage of your revenues generated in 2019 would you like to invest in the short term (0-12 months)?
Variable label	investment amount short-term
Variable type	numeric
Comment	If firms do not plan any short-term investments, cin11 is automatically set to 0.
Range	[0,100]
Filter	Conditional on cin1=1

Variable name	cin12
Original survey question	Welchen Anteil Ihres in 2019 erwirtschafteten Umsatzes (in %) möchten Sie mittelfristig (12-24 Monate) investieren?
English translation of survey question	What percentage of your revenues generated in 2019 would you like to invest in the short term (12-24 months)?
Variable label	investment amount medium-term
Variable type	numeric
Variable Comment	If firms do not plan any medium-term investments, cin12 is automatically set to 0.
Range	[0,100]
Filter	Conditional on cin2=1

Variable name	cin13-cin14
Original survey question	Hatten Sie vor der Corona-Krise Investitionen geplant, die Sie nun angesichts der Situation aufschieben oder gänzlich streichen?
English translation of survey question	Do you intend to postpone or cancel planned investments due to the Corona crisis?
Variable label	cin13 investment postponement cin14 investment cancellation
Variable type	numeric
Range	[0,100]
Filter	None

Variable name	chi1
Original survey question	Planen Sie derzeit, kurzfristig (0-12 Monate) zusätzliche Mitarbeiter einzustellen?
English translation of survey question	Are you currently planning to hire additional employees in the short term (0-12 months)?
Variable label	hiring short-term
Variable type	numeric
Range	[0,1] 0 =No 1 =Yes
Filter	None

Variable name	chi2
Original survey question	Planen Sie derzeit, mittelfristig (12-24 Monate) zusätzliche Mitarbeiter einzustellen?
English translation of survey question	Are you currently planning to hire additional employees in the medium term (12-24 months)?
Variable label	hiring medium-term
Variable type	numeric
Range	[0,1] 0 =No 1 =Yes
Filter	None

Variable name	chi3
Original survey question	Wie viele zusätzliche Mitarbeiter (in vollen Stellen) möchten Sie kurzfristig (0-12 Monate) einstellen?
English translation of survey question	How many additional employees (in full-time positions) are you planning to hire in the short term (0-12 months)?
Variable label	hiring amount short-term
Variable type	numeric
Variable Comment	If firms do not plan any short-term hires, chi3 is automatically set to 0.
Range	[0,∞]
Filter	Conditional on chi1=1

Variable name	chi4
Original survey question	Wie viele zusätzliche Mitarbeiter (in vollen Stellen) möchten Sie mittelfristig (12-24 Monate) einstellen?
English translation of survey question	How many additional employees (in full-time positions) are you planning to hire in the short term (12-24 months)?
Variable label	hiring amount medium-term
Variable type	numeric
Variable Comment	If firms do not plan any medium-term hires, chi4 is automatically set to 0.
Range	[0,∞]
Filter	Conditional on chi2=1

Variable name	cun9
Original survey question	Was schätzen Sie: Wieviel Prozent der Unternehmen Ihrer Branche werden die Corona-Krise bis zum 31.12.2020 überstehen?
English translation of survey question	Please give an estimate: What fraction of companies in your industry will survive the Corona crisis until the 31st December 2020?
Variable label	Expectation: industry survival
Variable type	numeric
Range	[0-100]
Filter	None

Variable name	ccm1-ccm11	
Original survey question	Welche Maßnahmen ergreifen Sie kurzfristig (0-12 Monate), um die Mehrbelastung durch die Corona-Krise zu decken? Mehrfachnennungen sind möglich.	
English translation of survey question	What measures are you taking in the short term (0-12 months) to cope with the burden of the corona crisis? Multiple answers are possible.	
Variable label	ccm1	decrease wage or bonus
	ccm2	decrease number of employees
	ccm3	decrease disbursement shareholders
	ccm4	reduction retained earnings
	ccm5	price increase
	ccm6	outsourcing freelancers
	ccm7	outsourcing business parts
	ccm8	reduction R&D
	ccm9	planned taxation corporate tax
	ccm10	others
	ccm11	no measures planned
Variable type	numeric	
Comment	If ccm10 is selected, the text entry is stored in the variable ccm10_text (accessible under restrictive conditions).	
Range	[0,1] 0 =No 1 =Yes	
Filter	ccm9 conditional on ccgic1=1 or ccgic1=3 or ccgic1=6 or ccgic1=7 or ccgic1=9 or ccgic1=18.	

Variable name	ccm12-ccm14	
Original survey question	Für welche Gruppe(n) sehen Sie eine Verminderung von zukünftigen Lohnsteigerungen bzw. Bonuszahlungen vor? Mehrfachnennungen sind möglich.	
English translation of survey question	For which group(s) do you plan a reduction of future salary increases or bonus payments? Multiple answers are possible.	
Variable label	ccm12	salary/bonus reduction management board
	ccm13	salary/bonus reduction middle management
	ccm14	salary/bonus reduction other employees
Variable type	numeric	
Variable Comment	If firms do not plan to decrease wages or bonuses ccm12 to ccm14 are automatically set to 0.	
Range	[0,1] 0 =No 1 =Yes	
Filter	Conditional on ccm1=1	

Variable name	cgdp1-cgdp2	
Original survey question	Was denken Sie über die wirtschaftliche Entwicklung: Wie wahrscheinlich ist es (in Prozent), dass eine sehr schnelle wirtschaftliche Erholung bis Ende 2020 eintritt? Wie wahrscheinlich ist es (in Prozent), dass eine sehr langsame wirtschaftliche Erholung bis Ende 2020 eintritt?	
English translation of survey question	What do you think about the economic development: How likely (in percent) is it that a quick economic recovery will take place until the end of 2020? How likely (in percent) is it that a slow economic recovery will occur until the end of 2020?	
Variable label	cgdp1	Expectation: quick economic recovery
	cgdp2	Expectation: slow economic recovery
Variable type	numeric	
Range	[0,100]	
Filter	None	

Variable name	ccgic4
Original survey question	Wie schätzen Sie Ihr Unternehmen ein: Sind die Entscheidungsträger in Ihrem Unternehmen im Allgemeinen eher risikobereit oder versuchen sie, Risiken zu vermeiden?
English translation of survey question	What is your opinion on leadership in your company? Are the decision makers in your company generally more risk loving or do they try to avoid risks?
Variable label	managerial risk attitude
Variable type	numeric
Range	11 Point Likert Scale [0,10] 0 =very unwilling to take risks 10=very willing to take risks
Filter	None

Close I	Vielen Dank soweit, Sie haben es fast geschafft! Um zu erfahren, wie Sie die Krise weiter bewältigen und wie sich Ihr Unternehmen in den nächsten Jahren weiterentwickelt, würden wir Sie gerne zukünftig in Abständen von sechs bis zwölf Monaten befragen. Damit wir Sie für eine erneute Befragung erreichen können, benötigen wir für die weitere Verarbeitung Ihrer Kontaktdaten eine Einwilligung. Ihre Kontaktdaten werden getrennt vom Fragebogen ausschließlich für den Zweck dieser weiteren Befragung aufgehoben. Sie werden niemals mit den von Ihnen angegebenen Antworten in Verbindung gebracht. Ihre Daten werden niemals an Dritte weitergegeben. Nach Abschluss der letzten Befragung werden Ihre Kontaktdaten gelöscht. Die datenschutzrechtlichen Hinweise zur Verarbeitung der personenbezogenen Daten finden Sie im allgemeinen Datenschutzhinweis in unserer Erklärung zum Datenschutz. Wir wären sehr dankbar, wenn wir Sie für das weitere Mitwirken an unserem Forschungsprojekt gewinnen könnten. Selbstverständlich ist dies freiwillig und Sie können die Einwilligung jederzeit widerrufen.

Close II	**Zum guten Schluss.** Da es das Ziel des German Business Panels der Universität Mannheim und des TRR 266 ist, ein vollständiges Bild der Unternehmenslandschaft in Deutschland zur wissenschaftlichen Auswertung zu etablieren, möchte die Universität Mannheim erhobene Umfragedaten mit Daten aus getrennt vorliegenden Unternehmensdatenbanken oder mit auf Webseiten frei zugänglichen Daten verknüpfen. Dabei handelt es sich zum Beispiel um Informationen zur Größe, zur Bilanz, zur Rechtsform, zum Wirtschaftszweig und zu weiteren Strukturinformationen Ihres Unternehmens. Zum Zweck der Zuspielung dieser Daten an die Befragungsdaten benötigen wir Ihre Einwilligung. Das Zusammenspielen der Informationen wird in einer Datentreuhänderstelle der Universität Mannheim vorgenommen, zu der Sie weitere Informationen auf unserer Webseite erhalten. Die datenschutzrechtlichen Hinweise finden Sie in unserer Erklärung zum Datenschutz. Wir freuen uns sehr, wenn Sie uns dabei unterstützen, die Erwartungen und Einschätzungen der Unternehmen in Deutschland besser zu verstehen. Ihre Einwilligung ist natürlich freiwillig. Sie können sie jederzeit widerrufen. Durch den Widerruf wird die Rechtmäßigkeit, der aufgrund der Einwilligung bis zum Widerruf erfolgten Verarbeitung nicht berührt.

Appendix

Experiment 2: Graphics

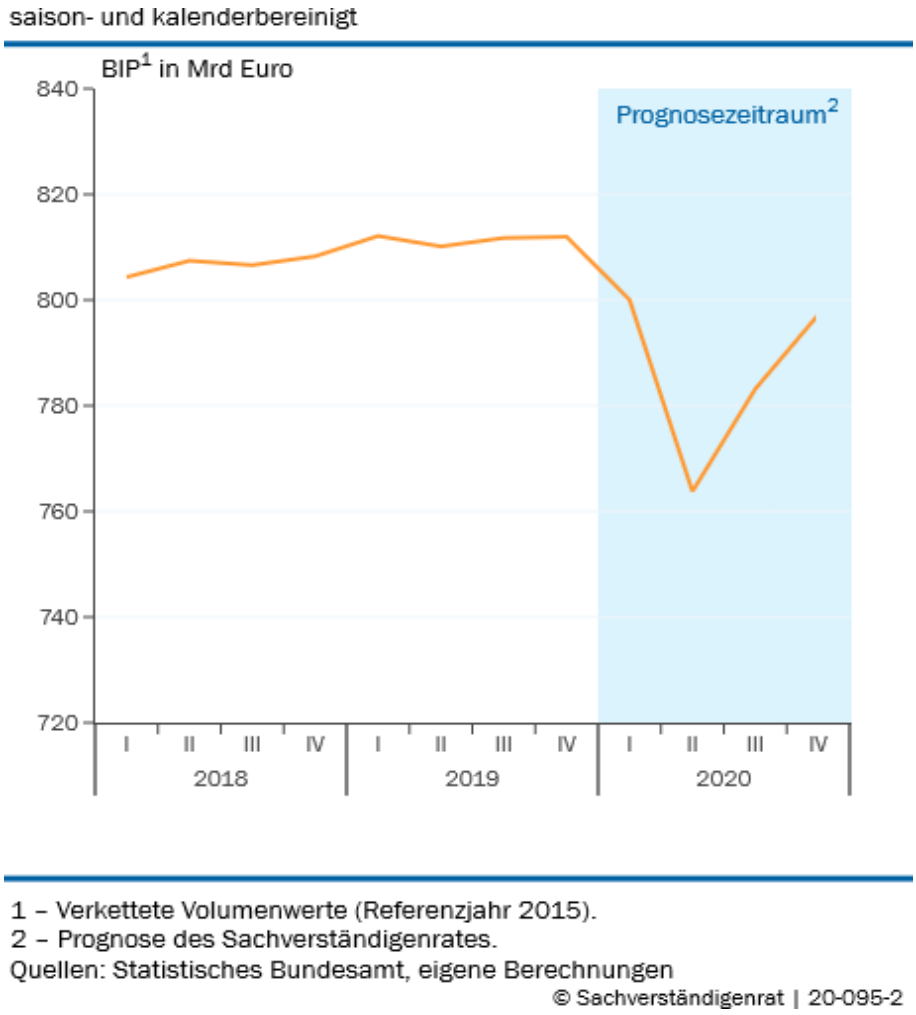

Figure 1: Experiment 2 Information Treatment 1

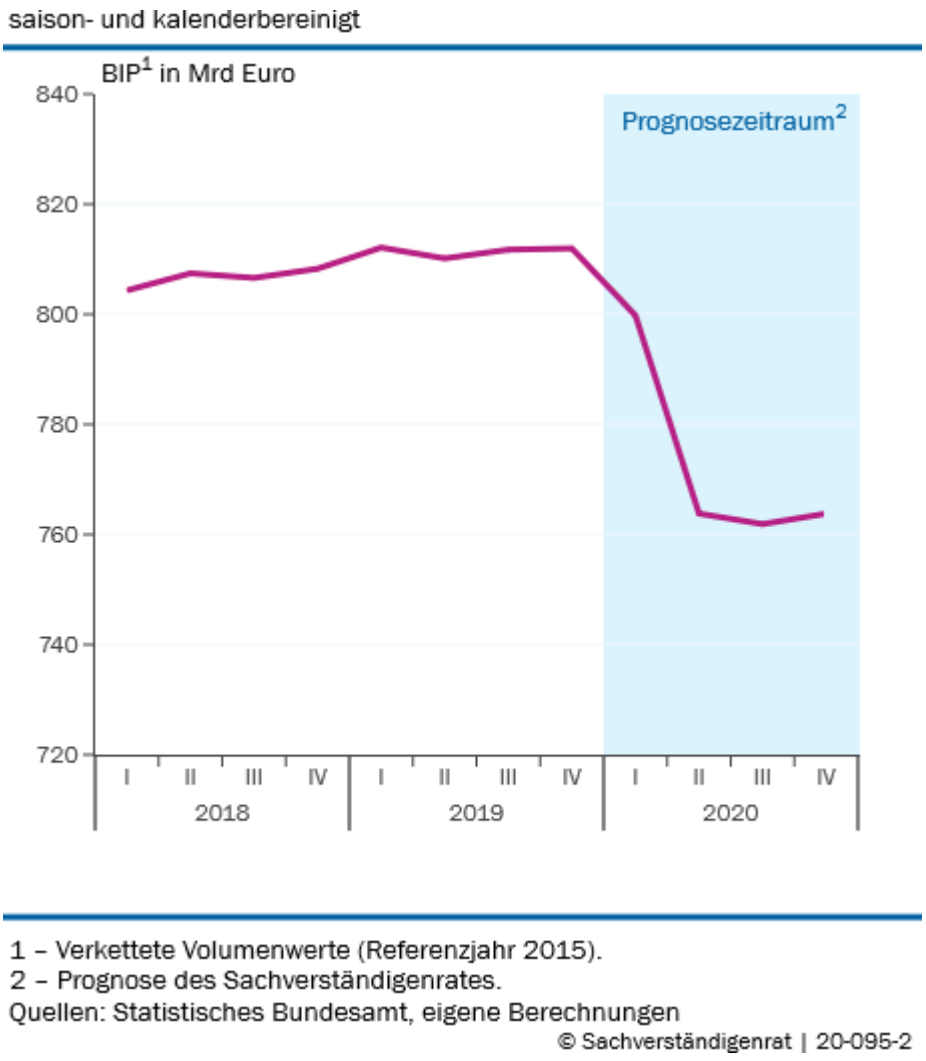

Figure 2: Experiment 2 Information Treatment 2

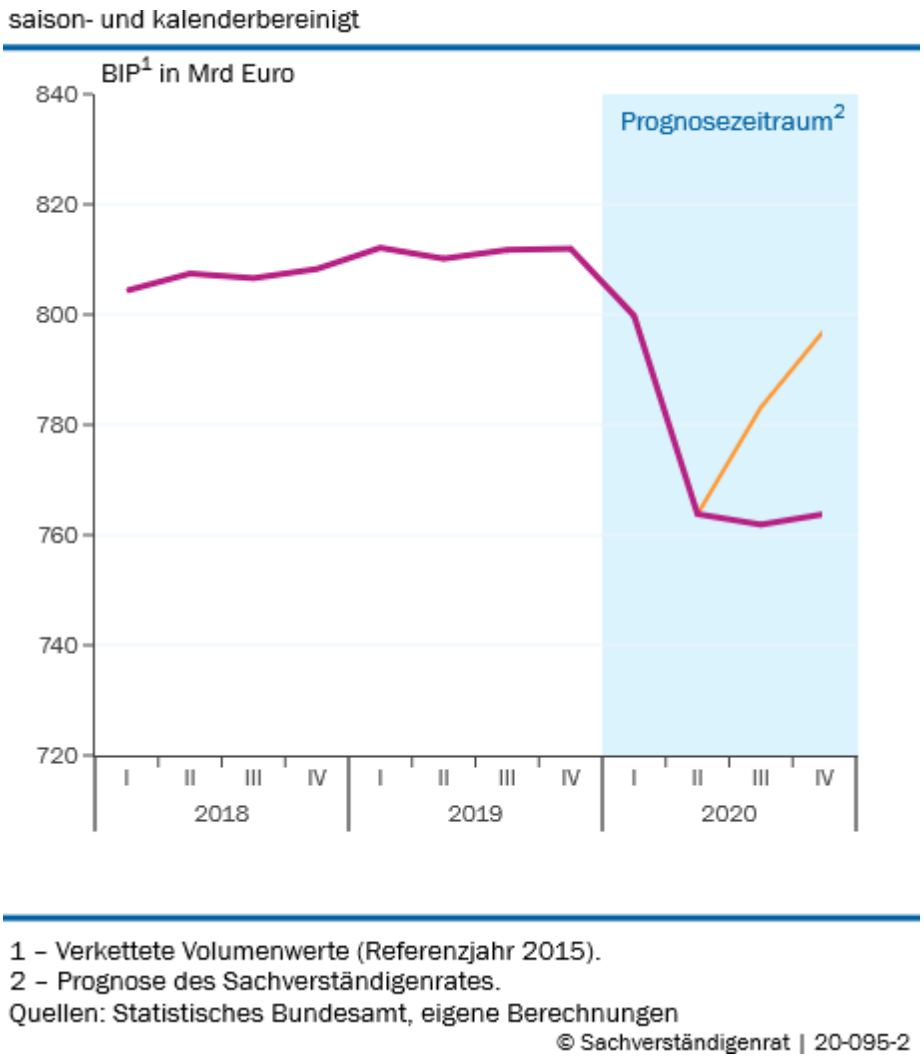

Figure 3: Experiment 2 Information Treatment 3

Title: German Business Panel Codebook
Questionnaire: Uncertainty, Firm Investments, Employment, Survival and Fiscal Policy During and Beyond the COVID-19 Crisis
Version: 3.1 (22.11.2021)
Contact: gbpinfo@mail.uni-mannheim.de
Principal Investigators: Prof. Dr. Jannis Bischof, Prof. Dr. Dirk Simons, Prof. Dr. Johannes Voget
Affiliated Principal Investigators: Prof. Dr. Philipp Dörrenberg
Authors: Dr. Davud Rostam-Afschar (Project Leader), Dr. Florian Buhlmann, Phares Akari, Laura Arnemann, Fabian Eble, Sarah Gharbi, Christopher Karlsson

Funding: Deutsche Forschungsgemeinschaft (DFG, German Research Foundation): Collaborative Research Center (SFB/TRR) Project-ID 403041268 – TRR 266 Accounting for Transparency

SFB/Transregio 266

ACCOUNTING FOR TRANSPARENCY

German Business Panel

Version 3.1 (22.11.2021)

German Business Panel

Cost Structure, Accounting Choices, Corona Support Programs, Tax Incidence, Organizational Trust During and Beyond the COVID-19 Crisis

Codebook: Round 2

Bischof | Simons | Voget | Dörrenberg | Rostam-Afschar | Buhlmann | Akari | Arnemann | Eble | Gharbi | Karlsson

Das German Business Panel ist ein langfristiges Befragungspanel des DFG-geförderten überregionalen Projektes „Accounting for Transparency“

DFG Deutsche Forschungsgemeinschaft

UNIVERSITÄT MANNHEIM

Mit Unterstützung vom ZEW

Overview & Example

Brief summary: The COVID-19 crisis is arguably one of the greatest concerns of firms in Germany in these days. Therefore, the German Business Panel developed a survey to ask a representative sample of firms in German about their perceived economic uncertainty, their plans for investments, and employment. We also asked about expectations about firm survival, take-up of government support, and managerial strategies to mitigate the impact of the COVID-19 crisis and firm characteristics. The questionnaire was launched on the 16th November 2020 and closed on the 24th June 2021.

Variable name: Variable names are indicated in the top row of each question summary. In case the question has multiple items, the items are indicated by a number. Variable names are provided along with English labels.

Coding (incl. missing convention): The coding of the variables indicates the variable range.

-9999	dropout	-9996	does not apply	-9997	don't know
-9998	refusal	-9995	recoding		

Variable type: Types of variables can be **string** or **numeric**.

Filtering: Filters and conditional redirects are highlighted by Courier. If questions are presented to all respondents, this is not explicitly stated.

Example:

Variable name	ccd1-ccd7	
Original survey question	In welchem Ausmaß wurden die folgenden Kennzahlen Ihres Unternehmens durch die Corona-Krise beeinflusst? Bitte vergleichen Sie die aktuellen Kennzahlen mit den Kennzahlen zum Jahresbeginn 2020.	
English translation of survey question	To what extent were the following key figures impacted by the Corona crisis? Please indicate by what percentage the key figures have changed compared to the beginning of 2020.	
Variable label	ccd1	revenue impact
	ccd2	no. of employees impact
	ccd3	liquidity impact
	ccd4	liabilities impact
	ccd5	accounts receivable impact
	ccd6	net income impact
	ccd7	accruals impact
Variable type	numeric	
Range	[-100,100]	
Filter	None	

Contents

Survey Start

Opening	**Vielen Dank, dass Sie sich bereiterklärt haben, an unserer Befragung teilzunehmen** Ihre Mitarbeit an dieser Befragung ist für die Aussagekraft unserer Studie ausgesprochen wichtig. Die Befragung kann jederzeit unterbrochen werden und durch erneutes Klicken auf Ihren persönlichen Link an derselben Stelle fortgesetzt werden. Bitte beantworten Sie die Fragen aus der Sicht Ihres Unternehmens. **Informationen zum Datenschutz** Ihre Angaben werden selbstverständlich streng vertraulich nach EU-Datenschutz-Grundverordnung (DSGVO) sowie den weiteren Datenschutzgesetzen behandelt. Die forschungsbezogenen Ergebnisse werden ausschließlich in anonymisierter Form in Veröffentlichungen verwendet. Insbesondere möchten wir auf die folgenden Punkte hinweisen: • Alle Befragungsdaten werden ausschließlich zu Forschungszwecken benutzt. Ihre Angaben werden selbstverständlich streng vertrauliche behandelt. • Ihre Teilnahme an unserer Studie ist freiwillig. Mit Ihrer Teilnahme willigen Sie ein, dass Ihre Daten gespeichert, verarbeitet und weitergegeben werden dürfen. • Sie können ihre Einwilligung jederzeit widerrufen. Durch den Widerruf wird die Rechtmäßigkeit der aufgrund der Einwilligung bis zum Widerruf erfolgten Verarbeitung nicht berührt. • Die forschungsbezogenen Ergebnisse werden ausschließlich in anonymisierte und aggregierter Form in Veröffentlichungen verwendet, so dass keine Rückschlüsse auf Ihre Person sowie Ihr Unternehmen möglich sind • Ausführliche Informationen erhalten Sie in unserer Erklärung zum Datenschutz ☐ Ja, ich habe die Informationen zum Datenschutz gelesen, verstanden und möchte an der Befragung teilnehmen.

Variable name	gbpid
Comment	Researchers may use gbpid as the unique identifier to construct a panel dataset.
Variable label	gbp identification number
Variable type	string

Variable name	BvDID
Comment	Researchers may use BvDID for matching purposes.
Variable Label	bvdid
Variable type	string

Variable name	startDate
Comment	This variable indicates the time when the recipient starts the survey. Example: 24sep2021 11:46:11
Variable label	survey start date
Variable type	date in Stata %tc format

Variable name	endDate
Comment	This variable indicates the time when the recipient finishes the survey. Example: 24sep2021 11:46:11
Variable label	survey end date
Variable type	date in Stata %tc format

Variable name	recordedDate
Comment	This variable implies the time when the answers are uploaded to the server. Example: 24sep2021 11:46:11
Variable label	recorded date
Variable type	date in Stata %tc format

Variable name	ccgic1
Original survey question	Welche Rechtsform hat ihr Unternehmen?
English translation of survey question	What is the legal form of your company?
Variable label	legal form
Variable type	numeric
Comment	If “Other” is selected, the corresponding text entry is stored in variable ccgic1_text (accessible under restrictive conditions).
Range	[1, 18] 1 = Einzelunternehmen 2 = GmbH 3 = GmbH & Co. KG 4 = UG 5 = AG 6 = oHG 7 = GbR 8 = PartG 9 = KG 10 = SE 11 = Verein 12 = KGaA 13 = Genossenschaft 14 = Öffentlich-rechtliches Unternehmen 15 = Personengesellschaft 16 = Limited 17 = Stiftung 18 = Other
Filter	None

Variable name	ccgic2
Original survey question	Bitte geben Sie den Jahresumsatz (in EUR) im Jahr 2019 Ihres Unternehmens an.
English translation of survey question	Please indicate the annual revenue (in EUR) of your company in 2019.
Variable label	annual revenue
Variable type	numeric
Range	[0, ∞)
Filter	None

Variable name	ccgic3
Original survey question	Welches der folgenden Intervalle entspricht am ehesten dem Jahresumsatz Ihres Unternehmens im Jahr 2019?
English translation of survey question	Which of the following intervals corresponds most closely to the annual revenue of your company in 2019?
Variable label	annual revenue categorical
Variable type	numeric
Comment	Revenues provided in ccgic2 will automatically be translated in the respective category of ccgic3.
Range	[1,14] 1 = Less than 50.000 EUR 2 = 50.000 – 100.000 EUR 3 = 100.001 – 350.000 EUR 4 = 350.001 – 700.000 EUR 5 = 700.001 – 2.000.000 EUR 6 = 2.000.001 – 6.000.000 EUR 7 = 6.000.001 – 8.000.000 EUR 8 = 8.000.001 – 10.000.000 EUR 9 = 10.000.001 – 12.000.000 EUR 10 = 12.000.001 – 20.000.000 EUR 11 = 20.000.001 – 40.000.000 EUR 12 = 40.000.001 – 50.000.000 EUR 13 = 50.000.001 – 60.000.000 EUR 14 = More than 60.000.000 EUR
Filter	Conditional on ccgic2 being empty

Variable name	ccgic5
Original survey question	Wie viele sozialversicherungspflichtige Mitarbeiter (in vollen Stellen) hat Ihr Unternehmen?
English translation of survey question	How many employees (full-time) are subject to social security in your firm?
Variable label	number employees
Variable type	numeric
Range	[0,∞)
Filter	None

Variable name	ccgic6
Original survey question	Welches der folgenden Intervalle entspricht am ehesten der Zahl der sozialversicherungspflichtigen Mitarbeiter (in vollen Stellen) in Ihrem Unternehmen?
ENGLISH TRANSLATION OF THE Original survey question	Which of the following intervals corresponds most closely to the number of employees (full-time) subject to social security in your firm?
Variable label	number employees categorical
Variable type	numeric
Comment	Number of employees provided in ccgic5 will automatically be translated in the respective category of ccgic6.
Range	[1,9] 1 = No employees 2 = 1-5 3 = 6-9 4 = 10-19 5 = 20-49 6 = 50-249 7 = 250-499 8 = 500-999 9 = More than 1000
Filter	Conditional on ccgic5 being empty

Variable name	ccgic11
Variable label	salutation
Variable type	string
Filter	None

Variable name	ccgic12
Variable label	title
Variable type	string
Filter	None

Variable name	ccgic13
Variable label	highest level of education
Variable type	string
Filter	None

Variable name	ccgic14
Variable label	position in the company
Variable type	string
Filter	None

Variable name	ccgic15
Variable label	division in the company
Variable type	string
Filter	None

Variable name	industry_WZ08
Original survey question	Bitte wählen sie den für Ihr Unternehmen bedeutendsten Wirtschaftszweig, in dem Sie aktiv sind, durch die Wahl der zutreffenden Kategorien.
English translation of survey question	Please select the most important industry sector, in which your company is active, by selecting the corresponding category.
Variable label	industry classification
Variable type	numeric
Comment	The variable indicates the most important industry in which the firm is active in according to the classification scheme by German Statistical Office. The level of detail stored corresponds to the specification by the respondents.
Filter	None

Variable name	cdat2
Original survey question	**Unterstützen Sie uns in zukünftigen Befragungen, um die langfristige wirtschaftliche Entwicklung besser verstehen zu können und damit die Rahmenbedingungen für die deutsche Wirtschaft zu verbessern!** Um zu erfahren, wie staatliche Regulierung auf Unternehmen wirkt (gerade aktuell in der Corona-Krise) und wie sie verbessert werden kann, würden wir Sie gerne zu weiteren Befragungen einladen. Dafür benötigen wir für die weitere Verarbeitung Ihrer Kontaktdaten eine Einwilligung. Ihre Kontaktdaten werden getrennt vom Fragebogen ausschließlich für den Zweck weiterer Befragungen aufgehoben. Sie werden niemals mit den von Ihnen angegebenen Antworten in Verbindung gebracht. Ihre Kontaktdaten werden niemals an Dritte weitergegeben. Nach Abschluss der letzten Befragung werden Ihre Kontaktdaten gelöscht. Ausführliche Informationen erhalten Sie in unseren Datenschutzhinweisen nach Art. 13 DSGVO. Wir wären sehr dankbar, wenn wir Sie für das weitere Mitwirken an unserem Forschungsprojekt gewinnen könnten. Selbstverständlich ist dies freiwillig und Sie können die Einwilligung jederzeit widerrufen. Durch den Widerruf wird die Rechtmäßigkeit der aufgrund der Einwilligung bis zum Widerruf erfolgten Verarbeitung nicht berührt.
Variable label	contact agreement
Variable type	numeric
Range	[0,1] 0 = No 1 = Yes
Filter	None

Variable name	cdat3
Original survey question	**Leisten Sie einen Beitrag, um Klarheit über die Situation und Struktur von Unternehmen in Deutschland zu schaffen! Damit kann die Wissenschaft einen Beitrag leisten, die Rahmenbedingungen für die deutsche Wirtschaft zu verbessern.** Um ein vollständiges Bild der Unternehmenslandschaft in Deutschland zu etablieren, möchten wir die erhobenen Umfragedaten mit Daten aus getrennt vorliegenden Unternehmensdatenbanken oder mit auf Webseiten frei zugänglichen Daten verknüpfen. Dies können beispielsweise Informationen zum Wirtschaftszweig und zu weiteren Strukturinformationen Ihres Unternehmens sein. Für die Verknüpfung dieser Daten mit den Befragungsdaten benötigen wir Ihre Einwilligung. Die datenschutzrechtlichen Hinweise finden Sie in unserer Erklärung zum Datenschutz. Veröffentlichungen der anonymisierten Ergebnisse von Analysen der verknüpften Daten erlauben keine Rückschlüsse auf Ihre Person oder Ihr Unternehmen. Wir freuen uns sehr, wenn Sie uns dabei unterstützen, die Erwartungen und Einschätzungen der Unternehmen in Deutschland besser zu verstehen. Ihre Einwilligung ist natürlich freiwillig. Sie können sie jederzeit widerrufen. Durch den Widerruf wird die Rechtmäßigkeit der aufgrund der Einwilligung bis zum Widerruf erfolgten Verarbeitung nicht berührt.
Variable label	data linking agreement
Variable type	numeric
Range	[0,1] 0 = No 1 = Yes
Filter	None

Variable name	AGS
Comment	The AGS (amtlicher Gemeindeschlüssel), issued by the statistical offices, identifies the municipality of the company. (available under restrictive conditions).
Variable label	official municipality code
Variable type	string
Filter	None

Variable name	weight
Comment	This variable indicates the sampling weights with regard to each observation. The sampling weights are calculated by raking algorithms. Further information please consult the relevant documentation on the GBP website.
Variable label	sampling weights
Variable type	numeric
Filter	None

Variable name	wave
Comment	This variable indicates the survey wave.
Variable label	survey wave
Variable type	string
Filter	None

Crisis Impact & Cost Structure

Variable name	ccd1-ccd7	
Original survey question	In welchem Ausmaß wurden die folgenden Kennzahlen Ihres Unternehmens durch die Corona-Krise beeinflusst? Bitte vergleichen Sie die aktuellen Kennzahlen mit den Kennzahlen zum Jahresbeginn 2020.	
English translation of survey question	To what extent were the following key figures impacted by the Corona crisis? Please indicate by what percentage the key figures have changed compared to the beginning of 2020.	
Variable label	ccd1	revenue impact
	ccd2	no. of employees impact
	ccd3	liquidity impact
	ccd4	liabilities impact
	ccd5	accounts receivable impact
	ccd6	net income impact
	ccd7	accruals impact
Variable type	numeric	
Range	[-100,100]	
Filter	None	

Variable name	cun5
Original survey question	Was schätzen Sie: Wann werden die monatlichen Umsätze Ihres Unternehmens wieder so hoch sein wie zum Zeitpunkt vor der Corona-Krise?
English translation of survey question	Please give an estimate: when will the monthly revenue from your company reach the pre-corona crisis levels?
Variable label	Expectation: revenue recovery
Variable type	numeric
Comment	If 1 is selected, the date entry is stored in the variable cun5_date.
Range	[1,3] 1 = On (see var cun5_date) 2 = Already recovered 3 = Never
Filter	Conditional on ccd1<0

Variable name	cun5_date
Original survey question	Was schätzen Sie: Wann werden die monatlichen Umsätze Ihres Unternehmens wieder so hoch sein wie zum Zeitpunkt vor der Corona-Krise?
English translation of survey question	Please give an estimate: when will the monthly revenue from your company reach the pre-corona crisis levels?
Variable label	Expectation: date of revenue recovery
Variable type	string (“yyyy-mm-dd”)
Comment	The earliest possible date entry equals the start date of the survey.
Range	≥ 2020-11-16
Filter	Conditional on cun5=1

Variable name	cos1
Original survey question	Wie schwierig ist es für Ihr Unternehmen, Ihre Kosten bei sinkender Nachfrage (bspw. bedingt durch die Corona-Krise) innerhalb von 3 Monaten zu verringern?
English translation of survey question	How difficult is it for your company to reduce your costs within 3 months when facing decreasing demand (e.g. due to the Corona crisis)?
Variable label	difficulty cost reduction
Variable type	numeric
Range	11 Point Likert Scale [0,10] 0 = Very easy 5 = Neither easy nor difficult 10 = Very difficult
Filter	None

Variable name	cos2 - cos9	
Original survey question	Was sind für Ihr Unternehmen die größten Hürden zur Kostensenkung?	
English translation of survey question	What are the biggest hurdles for your company when reducing costs?	
Variable label	cos2	long-term employee contracts
	cos3	know-how retention
	cos4	other long-term commitments
	cos5	legal obligations
	cos6	disposal of operating assets less economical than capacity reduction/shutdowns
	cos7	planning uncertainty
	cos8	other reasons
	cos9	no hurdles
Variable type	numeric	
Comment	If cos8 is selected, the text entry is stored in the variable cos8_text (accessible under restrictive conditions).	
Range	[0,1] 0 = No 1 = Yes	
Filter	None	

Variable name	cos10-cos13	
Original survey question	Sie haben angegeben, dass Sie Umsätze steigern konnten. Was war der Grund dafür?	
English translation of survey question	What are reasons for the revenue increase?	
Variable label	cos10	higher demand
	cos11	higher market prices
	cos12	others
	cos13	I don't know
Variable type	numeric	
Comment	If cos12 is selected, the text entry is stored in the variable cos12_text (accessible under restrictive conditions).	
Range	[0,1] 0 = No 1 = Yes	
Filter	Conditional on ccd1>=5	

Variable name	cos14-cos19	
Original survey question	Wie konnten Sie die höhere Nachfrage bedienen?	
English translation of survey question	How were you able to meet the higher demand?	
Variable label	cos14	employment of more personnel
	cos15	additional investments (PP&E, Technologies or other Assets)
	cos16	free capacity
	cos17	price increases to counteract increase in demand
	cos18	others
	cos19	not at all
Variable type	numeric	
Comment	If cos18 is selected, the text entry is stored in the variable cos18_text (accessible under restrictive conditions).	
Range	[0,1] 0 = No 1 = Yes	
Filter	Conditional on cos10=1	

Variable name	cos20-cos28	
Original survey question	Was sind für Ihr Unternehmen die größten Hürden zur Kapazitätserhöhung?	
English translation of survey question	What are the biggest hurdles for your company when increasing capacity?	
Variable label	cos20	issues finding qualified personnel
	cos21	contractual regulations
	cos22	legal regulations
	cos23	missing liquidity
	cos24	Corona induced supply chain issues
	cos25	other supply chain issues
	cos26	planning uncertainty
	cos27	others
	cos28	no hurdles
Variable type	numeric	
Comment	If cos27 is selected, the text entry is stored in the variable cos27_text (accessible under restrictive conditions).	
Range	[0,1] 0 = No 1 = Yes	
Filter	Conditional on ccd1>=5	

Accounting Choices

Variable name	em1
Original survey question	Rechnungslegungsvorschriften räumen Unternehmen verschiedene Wahlrechte (bspw. die Wahl der Abschreibungsmethode) und Ermessensspielräume (bspw. bei der Bewertung von Rückstellungen) ein. Mit diesen lässt sich der Gewinn im Zeitablauf in unterschiedliche Richtungen beeinflussen. Welchen Effekt hatten die von Ihrem Unternehmen ausgeübten Wahlrechte und Ermessensspielräume in der aktuellen Periode?
English translation of survey question	Accounting regulations offer companies various options (e.g. the choice of depreciation method) and discretionary powers (e.g. in the evaluation of accruals). These can be used to influence profit in different directions over time. What effect did the options and discretions exercised by your company have in the current period?
Variable label	effect discretionary accounting choices
Variable type	numeric
Range	11 Point Likert Scale [0,10] 0 = Strongly profit-reducing 5 = Neutral 10 = Strongly profit-increasing
Filter	None

Expectstions & Uncertainty (Corona Crisis)

Variable name	cun1
Original survey question	Was schätzen Sie: An welchem Datum wird das öffentliche Leben in Deutschland aufgrund der Corona-Krise nicht mehr eingeschränkt sein?
English translation of survey question	Please give an estimate: On what date will public life in Germany no longer be restricted due to the Corona crisis?
Variable label	Expectation: date end of restrictions
Variable type	string (“yyyy-mm-dd”)
Range	≥ 2020-11-16
Filter	None

Variable name	cun2
Original survey question	Wie sicher sind Sie sich bezüglich des von Ihnen angegebenen Datums?
English translation of survey question	How certain are you with respect to the date you provided?
Variable label	Certainty: end of restrictions
Variable type	numeric
Range	11 Point Likert Scale [0,10] 0 = Very unsecure 10 = Very secure
Filter	Conditional on valid entry for cun1

Variable name	cun10-cun15	
Original survey question	Erwarten Sie, dass Ihr Unternehmen vor dem Ende der Krise von einer Schließung betroffen sein wird?	
English translation of survey question	Do you expect your company to be affected by a closure before the end of the crisis?	
Variable label	cun10	no
	cun11	yes – temporarily
	cun12	yes – permanently
	cun13	already temporarily closed
	cun14	already permanently closed
	cun15	I don't know
Variable type	numeric	
Range	[0,1] 0 = No 1 = Yes	
Filter	None	

Variable name	cun16
Original survey question	Wie sicher sind Sie sich, dass Ihr Unternehmen von einer Schließung betroffen sein wird?
English translation of survey question	How certain are you that your company will be affected by a closure?
Variable label	Certainty: company closure
Variable type	numeric
Range	11 Point Likert Scale [0,10] 0 = Uncertain 10 = Very certain
Filter	Conditional on cun11=1 or cun12=1

Variable name	cun9
Original survey question	Was schätzen Sie: Wieviel Prozent der Unternehmen Ihrer Branche werden die Corona-Krise bis zum 31.12.2021 überstehen?
English translation of survey question	Please give an estimate: What fraction of companies in your industry will survive the Corona crisis until the 31st December 2021?
Variable label	Expectation: industry survival
Variable type	numeric
Range	[0,100]
Filter	None

Federal Government – Corona Emergency Measures

Variable name	cgm1-cgm10	
Original survey question	Welche der im Frühjahr/Sommer 2020 beschlossenen nicht-steuerlichen staatlichen Mittel/Maßnahmen haben Sie aufgrund der Corona-Krise erhalten? Mehrfachnennungen sind möglich.	
English translation of survey question	Which of the non-tax related government measures from spring/summer 2020 have you received due to the Corona crisis? Multiple answers are possible.	
Variable label	cgm1	Corona emergency relief
	cgm2	interim aid
	cgm3	short-term work/allowance
	cgm4	guarantees/sureties
	cgm5	credit authorization
	cgm6	refinancing of existing KfW credits
	cgm7	KfW special program
	cgm8	simplified access security benefits
	cgm9	others
	cgm10	no measures requested/received
Variable type	numeric	
Comment	If cgm9 is selected, the text entry is stored in the variable cgm9_text (accessible under restrictive conditions).	
Range	[0,1] 0 = No 1 = Yes	
Filter	None	

Variable name	cgm11-cgm19	
Original survey question	Welche der im Frühjahr/Sommer beschlossenen steuerlichen staatlichen Mittel/Maßnahmen haben Sie aufgrund der Corona-Krise erhalten? Mehrfachnennungen sind möglich.	
English translation of survey question	Which tax related measures passed in the spring/summer have you received due to the Corona crisis? Multiple answers are possible.	
Variable label	cgm11	refund tax prepayment for 2020
	cgm12	immediate loss carryback
	cgm13	deferral tax payments
	cgm14	suspension enforcement measures
	cgm15	taxation corporate tax
	cgm16	deferral of import turnover tax
	cgm17	reintroduction degressive depreciation
	cgm18	others
	cgm19	no measures requested/received
Variable type	numeric	
Comment	If cgm18 is selected, the text entry is stored in the variable cgm18_text (accessible under restrictive conditions).	
Range	[0,1] 0 = No 1 = Yes	
Filter	cgm15 conditional on ccgic1=1 or ccgic1=3 or ccgic1=6 or ccgic1=7 or ccgic1=9 or ccgic1=18	

Variable name	cgm21-cgm25	
Original survey question	Nahmen oder nehmen Sie Corona-Hilfsmaßnahmen der Bundesregierung im Herbst/Winter 2020 in Anspruch? Mehrfachnennungen sind möglich.	
English translation of survey question	Did you receive or are you receiving Corona assistance from the federal government in the fall/winter of 2020? Multiple answers are possible.	
Variable label	cgm21	extraordinary economic aid
	cgm22	short-term work/allowance
	cgm23	interim aid
	cgm24	others
	cgm25	none
Variable type	numeric	
Comment	If cgm24 is selected, the text entry is stored in the variable cgm24_text (accessible under restrictive conditions).	
Range	[0,1] 0 = No 1 = Yes	
Filter	Conditional on cun14≠1	

Variable name	cgm26
Original survey question	Wie zufrieden sind Sie mit den aktuellen staatlichen Hilfsmaßnahmen im Vergleich zum Frühjahr 2020?
English translation of survey question	How satisfied are you with the current governmental measures compared to spring 2020?
Variable label	satisfaction governmental measures vs. spring
Variable type	numeric
Range	[0,4] 0 = Very dissatisfied 4 = Very satisfied
Filter	Number of governmental measures claimed or requested≥1

Variable name	cgm27-cgm30	
Original survey question	Erwarten Sie, dass die staatlichen Mittel oder Maßnahmen ausreichen, damit Ihr Unternehmen die Corona-Krise übersteht?	
English translation of survey question	Do you expect that the governmental measurements are sufficient enough for your company to overcome the Corona crisis?	
Variable label	cgm27	yes
	cgm28	no, additional measures needed
	cgm29	no, the following other measures are needed:
	cgm30	I don’t know
Variable type	numeric	
Comment	If cgm29 is selected, the text entry is stored in the variable cgm29_text (accessible under restrictive conditions).	
Range	[0,1] 0 = No 1 = Yes	
Filter	Number of governmental measures claimed or requested≥1 & cun12≠1 & cun14≠1	

Variable name	cgm31–cgm39	
Original survey question	Sie haben angegeben staatliche Mittel/Maßnahmen zu beanspruchen bzw. beansprucht zu haben. Wofür wären bzw. waren diese am meisten nötig gewesen?	
English translation of survey question	You have stated that you claim or have claimed governmental assistance. For what would these have been (or were they) most needed?	
Variable label	cgm31	short-term liabilities
	cgm32	medium and long-term financing
	cgm33	repair and replacement work
	cgm34	wages and salary
	cgm35	deferred investment
	cgm36	tax payments
	cgm37	entrepreneurial wage
	cgm38	others
	cgm39	I don’t know
Variable type	numeric	
Comment	If cgm38 is selected, the text entry is stored in the variable cgm38_text (accessible under restrictive conditions).	
Range	[0,1] 0 = No 1 = Yes	
Filter	Number of governmental measures claimed or requested≥1	

Variable name	cgm40-cgm55	
Original survey question	Haben Sie eine der von Ihnen beanspruchten Hilfsmaßnahmen (teilweise) zurückgezahlt?	
English translation of survey question	Have you (partially) repaid any of the aid you claimed?	
Variable label	cgm40	Corona emergency relief
	cgm41	interim aid
	cgm42	short-term work/allowance
	cgm43	guarantees/sureties
	cgm44	credit authorization
	cgm45	refinancing of existing KfW credits
	cgm46	KfW special program
	cgm47	simplified access security benefits
	cgm48	other non-tax measures
	cgm49	refund tax prepayment for 2020
	cgm50	immediate loss carryback
	cgm51	deferral tax payments
	cgm52	suspension enforcement measures
	cgm53	deferral import turnover tax
	cgm54	other tax measures
	cgm55	no governmental assistance has been repaid
Variable type	numeric	
Range	[0,1] 0 = No 1 = Yes	
Filter	Number of governmental measures claimed or requested≥1	

Variable name	cgm56
Original survey question	Hatten Sie bei Beantragung erwartet, dass die staatlichen Mittel/Maßnahmen zurückgezahlt werden müssen?
English translation of survey question	When you applied, did you expect that the government measures would have to be repaid?
Variable label	Expectation: repayment of governmental measures
Variable type	numeric
Range	[0,1] 0 = No 1 = Yes
Filter	cgm54≠1

Variable name	cgm57-cgm62	
Original survey question	Was sind Ihrer Meinung nach die größten Hürden bei der Beantragung und dem Erhalt staatlicher Mittel zur Bewältigung der Corona-Krise? Mehrfachnennungen sind möglich.	
English translation of survey question	What do you think were the biggest hurdles in applying for and receiving government funding to cope with the Corona crisis? Multiple answers are possible.	
Variable label	cgm57	too much administrative effort needed
	cgm58	requested funds disbursed too late
	cgm59	criteria for the application were not met
	cgm60	no capacity of tax consultant
	cgm61	others
	cgm62	I don’t know
Variable type	numeric	
Comment	If cgm61 is selected, the text entry is stored in the variable cgm61_text (accessible under restrictive conditions).	
Range	[0,1] 0 = No 1 = Yes	
Filter	None	

Variable name	ccm1-ccm11	
Original survey question	Welche Maßnahmen ergreifen Sie kurzfristig (0-12 Monate), um die Mehrbelastung durch die Corona-Krise zu decken? Mehrfachnennungen sind möglich.	
English translation of survey question	What measures are you taking in the short-term (0-12 months) to cope with the burden of the Corona crisis? Multiple answers are possible.	
Variable label	ccm1	decrease wage or bonus
	ccm2	decrease number of employees
	ccm3	decrease disbursement shareholders
	ccm4	reduction retained earnings
	ccm5	price increase
	ccm8	reduction R&D
	ccm10	others
	ccm11	no measures planned
Variable type	numeric	
Comment	If ccm10 is selected, the text entry is stored in the variable ccm10_text (accessible under restrictive conditions).	
Range	[0,1] 0 = No 1 = Yes	
Filter	None	

Variable name	ccm15
Original survey question	Haben Sie Investitionen vorgenommen, damit Ihre Mitarbeiter sowie Kunden die Hygieneregeln einhalten können?
English translation of survey question	Have you made investments so that your employees as well as customers can comply with hygiene rules?
Variable label	hygiene investments
Variable type	numeric
Range	[0,1] 0 = No 1 = Yes
Filter	None

Variable name	ccm16
Original survey question	Wie viel haben Sie für die Maßnahmen zur Einhaltung der Hygieneregeln investiert (in €)?
English translation of survey question	How much have you invested in hygiene compliance measures (in €)?
Variable label	hygiene investment amount
Variable type	numeric
Range	≥ 0
Filter	Conditional on ccm15=1

Economic Growth Expectations

Variable name	cct27, cct28	
Original survey question	Was erwarten Sie: Um wieviel Prozent verändert sich das Bruttoinlandsprodukt (BIP) in den Jahren 2020 und 2021 im Vergleich zum jeweiligen Vorjahr?	
English translation of survey question	What do you expect: By what percentage will the gross domestic product (GDP) change in the years 2020 and 2021 compared to the respective previous year?	
Variable label	cct27	Expectation: GDP growth 2020-2021
	cct28	Expectation: GDP growth 2021-2022
Variable type	numeric	
Range	[-30,30]	
Filter	None	

Tax Incidence Survey Experiment

Firms are randomly assigned to one of six different treatment groups.

The different treatment groups receive either a permanent 1%, 10%, or 25% decrease in profit tax burden or a 1%, 10% or 25% permanent increase in profit tax burden.

The variable tax_exp indicates which treatment has been assigned to each observation.

Variable name	tax_exp
Original survey question	Nehmen Sie an: Ihr Unternehmen hat durch eine Steuersenkung *(Steuererhöhung)* eine um (1%/10%/25%) dauerhaft niedrigere *(höhere)* Gewinnsteuerbelastung.
English translation of survey question	Assume: Your company has a (1%/10%/25%) permanently lower *(higher)* profit tax burden as a result of a tax cut *(increase)*.
Variable label	indicator tax experiment assignment
Variable type	numeric
Range	[1,6] 1 = 1% permanently lower profit tax burden 2 = 10% permanently lower profit tax burden 3 = 25% permanently lower profit tax burden 4 = 1% permanently higher profit tax burden 5 = 10% permanently higher profit tax burden 6 = 25% permanently higher profit tax burden
Filter	None

Variable name	tax1-tax8	
Original survey question	Nehmen Sie an: Ihr Unternehmen hat durch eine Steuersenkung eine um (1%/10%/25%) dauerhaft **niedrigere** Gewinnsteuerbelastung. Wie verteilen Sie die zusätzlichen Mittel? Bitte geben Sie Anteile an, die in der Summe 100 ergeben.	
English translation of survey question	Assume: Your company has **a permanently lower profit tax burden** by (1%/10%/25%) due to a tax cut. How do you distribute the additional funds? Please enter shares that add up to 100.	
Variable label	tax1	increased payment to employees
	tax2	creation of additional jobs
	tax3	increased income for partners
	tax4	higher distributions to shareholders
	tax5	increase in retained earnings/reserves
	tax6	price reductions (for customers)
	tax7	higher investments
	tax8	less use of tax saving opportunities
	tax9	others
Variable type	numeric	
Comment	If tax9 is selected, the text entry is stored in the variable tax9_text (accessible under restrictive conditions).	
Range	[0,100] Sum of individual fractions cannot exceed 100%	
Filter	Conditional on tax_exp=1 or tax_exp=2 or tax_exp=3 tax3 conditional on ccgic1=1 or ccgic1=3 or ccgic1=4 or ccgic1=6 or ccgic1=7 or ccgic1=8 or ccgic1=9 tax 4 conditional on ccgic1=2 or ccgic1=5 or ccgic1=10 or ccgic1=11 or ccgic1=12 or ccgic1=13 or ccgic1=14 or ccgic1=18	

Variable name	tax10
Original survey question	Warum würden Sie nach einer Steuersenkung mehr investieren? Welcher der zwei folgenden Gründe spielt für Sie eine größere Rolle:
English translation of survey question	Why would you invest more after a tax cut? Which of the following two reasons plays a greater role for you?
Variable label	investment incentive tax reduction
Variable type	numeric
Range	[0,100] 0 = After the tax cut, more funds are available 50 = Both reasons are equally important 100 = After the tax cut, the investment is more worthwhile
Filter	Conditional on tax7≥5

Variable name	tax11-tax20	
Original survey question	Nehmen Sie an: Ihr Unternehmen hat durch eine Steuerhöhung eine um (1%/10%/25%) dauerhaft **höhere** Gewinnsteuerbelastung. Aus welchen Bereichen finanzieren Sie die zusätzliche Steuerlast? Bitte geben Sie Anteile an, die in der Summe 100 ergeben.	
English translation of survey question	Assume: Your company has **a permanently higher profit tax burden** by (1%/10%/25%) due to a tax increase. How do you finance the additional burden? Please enter shares that add up to 100.	
Variable label	tax11	decrease payment to employees
	tax12	reduction of jobs
	tax13	decreased payout to partners
	tax14	lower distributions to shareholders
	tax15	decrease in retained earnings/reserves
	tax16	price increases (for customers)
	tax17	lower investments
	tax18	more use of tax saving opportunities
	tax19	others
	tax20	increase in debt capital
Variable type	numeric	
Comment	If tax19 is selected, the text entry is stored in the variable tax19_text (accessible under restrictive conditions).	
Range	[0,100] Sum of individual fractions cannot exceed 100%	
Filter	Conditional on tax_exp=4 or tax_exp=5 or tax_exp=6 tax13 conditional on ccgic1=1 or ccgic1=3 or ccgic1=4 or ccgic1=6 or ccgic1=7 or ccgic1=8 or ccgic1=9 tax14 conditional on ccgic1=2 or ccgic1=5 or ccgic1=10 or ccgic1=11 or ccgic1=12 or ccgic1=13 or ccgic1=14 or ccgic1=18	

Variable name	tax21
Original survey question	Warum würden Sie nach einer Steuererhöhung weniger investieren? Welcher der zwei folgenden Gründe spielt für Sie eine größere Rolle:
English translation of survey question	Why would you invest less after a tax increase? Which of the following two reasons plays a greater role for you?
Variable label	investment incentive tax increase
Variable type	numeric
Range	[0,100] 0 = After the tax increase, there is less money to invest 50 = Both reasons are equally important 100 = After the tax increase, the investment is less worthwhile
Filter	Conditional on tax17≥5%

Overall Uncertainty

Variable name	cun17
Original survey question	Wie hoch ist die allgemeine Unsicherheit, mit der Ihr Unternehmen momentan konfrontiert ist?
English translation of survey question	How high is the general uncertainty your company is currently facing?
Variable label	Uncertainty: firm-level
Variable type	numeric
Range	[1,5] 1 = Very low: future revenue can be very precisely predicted 2 = Low: future revenue can be precisely predicted 3 = Medium: future revenue can be approximately predicted 4 = High: future revenue is difficult to predict 5 = Very high: future revenue is very difficult to predict
Filter	None

Investments

Variable name	cin1
Original survey question	Planen Sie derzeit, kurzfristig (0-12 Monate) Investitionen zu tätigen?
English translation of survey question	Are you currently planning to make short-term (0-12 months) investments?
Variable label	investment short-term
Variable type	numeric
Range	[0,1] 0 = No 1 = Yes
Filter	None

Variable name	cin2
Original survey question	Planen Sie derzeit, mittelfristig (12-24 Monate) Investitionen zu tätigen?
English translation of survey question	Are you currently planning to make medium-term (12-24 months) investments?
Variable label	investment medium-term
Variable type	numeric
Range	[0,1] 0 = No 1 = Yes
Filter	None

Variable name	cin11
Original survey question	Welchen Anteil Ihres in 2019 erwirtschafteten Umsatzes (in %) möchten Sie kurzfristig (0-12 Monate) investieren?
English translation of survey question	What percentage of your revenue generated in 2019 would you like to invest in the short term (0-12 months)?
Variable label	investment amount short-term
Variable type	numeric
Comment	If firms do not plan any short-term investments, cin11 is automatically set to 0.
Range	[0,100]
Filter	Conditional on cin1=1

Variable name	cin12	
Original survey question	Welchen Anteil Ihres in 2019 erwirtschafteten Umsatzes (in %) möchten Sie mittelfristig (12-24 Monate) investieren?	
English translation of survey question	What percentage of your revenues generated in 2019 would you like to invest in the medium term (12-24 months)?	
Variable label	investment amount medium-term	
Variable type	numeric	
Comment	If firms do not plan any medium-term investments, cin11 is automatically set to zero.	
Range	[0,100]	
Filter	Conditional on cin2=1	

Variable name	cin13-cin14	
Original survey question	Hatten Sie vor der Corona-Krise Investitionen geplant, die Sie nun angesichts der Situation aufschieben oder gänzlich streichen?	
English translation of survey question	Do you intend to postpone or cancel planned investments due to the Corona crisis?	
Variable label	cin13	investment postponement
	cin14	investment cancellation
Variable type	numeric	
Range	[0,100]	
Filter	None	

Hiring

Variable name	chi1
Original survey question	Planen Sie derzeit, kurzfristig (0-12 Monate) zusätzliche Mitarbeiter einzustellen?
English translation of survey question	Are you currently planning to hire additional employees in the short term (0-12 months)?
Variable label	hiring short-term
Variable type	numeric
Range	[0,1] 0 = No 1 = Yes
Filter	None

Variable name	chi2
Original survey question	Planen Sie derzeit, mittelfristig (12-24 Monate) zusätzliche Mitarbeiter einzustellen?
English translation of survey question	Are you currently planning to hire additional employees in the medium term (12-24 months)?
Variable label	hiring medium-term
Variable type	numeric
Range	[0,1] 0 = No 1 = Yes
Filter	None

Variable name	chi3
Original survey question	Wie viele zusätzliche Mitarbeiter (in vollen Stellen) möchten Sie kurzfristig (0-12 Monate) einstellen?
English translation of survey question	How many additional employees (in full-time positions) are you planning to hire in the short term (0-12 months)?
Variable label	hiring amount short-term
Variable type	numeric
Comment	If firms do not plan any short-term hires, chi3 is automatically set to zero.
Range	[0,∞)
Filter	Conditional on chi1=1

Variable Name	chi4
Original survey question	Wie viele zusätzliche Mitarbeiter (in vollen Stellen) möchten Sie mittelfristig (12-24 Monate) einstellen?
English translation of survey question	How many additional employees (in full-time positions) are you planning to hire in the medium term (12-24 months)?
Variable label	hiring amount medium-term
Variable type	numeric
Comment	If firms do not plan any short-term hires, chi3 is automatically set to zero.
Range	$[0,\infty)$
Filter	Conditional on chi2=1

Organizational Trust

Variable name	imp1-imp8	
Original survey question	Inwieweit stimmen Sie folgenden Aussagen zum Einfluss der Corona-Krise auf Ihr Unternehmen im Geschäftsjahr 2020 zu? Die Corona-Krise führte bei der Ermittlung der variablen Vergütung (z.B Boni) zu ...	
English translation of survey question	How far do you agree to the following statement concerning the effect of the corona crisis on your company in 2020? When determining variable payments, the corona crisis led to…	
Variable label	imp1	change in the weighting of KPIs
	imp2	use of new financial KPIs
	imp3	use of new non-financial KPIs
	imp4	adjustment of KPIs
	imp5	adjustment of Objectives
	imp6	other effects
	imp7	no change
	imp8	not relevant
Variable type	numeric	
Comment	If imp6 is selected, the text entry is stored in the variable imp6_text (accessible under restrictive conditions).	
Range	[0,1] 0 = No 1 = Yes	
Filter	Conditional on (ccgic5 ≥ 10 or ccgic6 ≥ 4) and (ccgic2 ≥ 1.000.000 or ccgic3 ≥ 6)	

Variable name	imp9-imp14	
Original survey question	Inwieweit stimmen Sie folgenden Aussagen zum Einfluss der Corona-Krise auf Ihr Unternehmen im Geschäftsjahr 2020 zu? Die Corona-Krise führte in Kreditverträgen zu…	
English translation of survey question	How far do you agree to the following statement concerning the effect of the corona crisis on your company in 2020? With regard to credit agreements, the corona crisis led to…	
Variable label	imp9	use of new KPIs
	imp10	aadjustment of existing KPIs
	imp11	adjustment of KPI thresholds
	imp12	other effects
	imp13	no change
	imp14	not relevant
Variable type	numeric	
Comment	If imp12 is selected, the text entry is stored in the variable imp12_text (accessible under restrictive conditions).	
Range	[0,1] 0 = No 1 = Yes	
Filter	Conditional on (ccgic5 ≥ 10 or ccgic6 ≥ 4) and (ccgic2 ≥ 1.000.000 or ccgic3 ≥ 6)	

Variable name	imp15-imp20	
Original survey question	Inwieweit stimmen Sie folgenden Aussagen zum Einfluss der Corona-Krise auf Ihr Unternehmen im Geschäftsjahr 2020 zu? Die Corona-Krise führte bei der Kommunikation an andere externe Adressaten (z.B. Kapitalgeber, Kunden, Lieferanten, Staat) zu...	
English translation of survey question	How far do you agree with the following statement concerning the effect of the corona crisis on your company in 2020? The Corona crisis led to the following changes in disclosures to external stakeholders…	
Variable label	imp15	use of new financial KPIs
	imp16	use of new non-financial KPIs
	imp17	adjustment of existing KPIs
	imp18	other effects
	imp19	no change
	imp20	not relevant
Variable type	numeric	
Comment	If imp18 is selected, the text entry is stored in the variable imp18_text (accessible under restrictive conditions).	
Range	[0,1] 0 = No 1 = Yes	
Filter	Conditional on (ccgic5 ≥ 10 or ccgic6 ≥ 4) and (ccgic2 ≥ 1.000.000 or ccgic3 ≥ 6)	

Variable name	imp21-imp26	
Original survey question	Inwieweit stimmen Sie folgenden Aussagen zum Einfluss der Corona-Krise auf Ihr Unternehmen im Geschäftsjahr 2020 zu? Die Corona-Krise führte bei uns zu...	
English translation of survey question	How far do you agree with the following statement concerning the effect of the corona crisis on your company in 2020? The Corona crisis led to…	
Variable label	imp21	discontinuation or interruption of medium- and long-term financial plans
	imp22	greater use of sensitivity and/or scenario analyses
	imp23	more explicit and transparent communication
	imp24	other effects
	imp25	no change
	imp26	not relevant
Variable type	numeric	
Comment	If imp24 is selected, the text entry is stored in the variable imp24_text (accessible under restrictive conditions).	
Range	[0,1] 0 = No 1 = Yes	
Filter	Conditional on (ccgic5 ≥ 10 or ccgic6 ≥ 4) and (ccgic2 ≥ 1.000.000 or ccgic3 ≥ 6)	

Variable name	imp27-imp30	
Original survey question	Zu welchem Zeitpunkt wurde und/oder wird bei Ihnen die Corona-Krise erstmals berücksichtigt?	
English translation of survey question	At what point in time has and/or is the Corona crisis first been considered within your company?	
Variable label	imp27	determining variable compensation
	imp28	internal planning and analyses
	imp29	credit agreements
	imp30	communication to stakeholders
Variable type	numeric	
Range	[1,4] 1 = In the first half of 2020 2 = In the second half of 2020 3 = After the second half of 2020 4 = Does not apply to us	
Filter	Conditional on (ccgic5 ≥ 10 or ccgic6 ≥ 4) and (ccgic2 ≥ 1.000.000 or ccgic3 ≥ 6)	

Variable name	tru1-4	
Original survey question	Wie schätzen Sie Ihr Unternehmen ein?	
English translation of survey question	How would you assess your company?	
Variable label	tru1	There is a very high level of trust throughout the company
	tru2	When someone within the company makes a promise, others in the company almost always trust that person to do his/her best to keep the promise
	tru3	In this company, employees have a lot of trust in managers
	tru4	Managers in this company trust their employees to make good decisions
Variable type	numeric	
Range	11 Point Likert Scale [0,10] 0 = I do not agree at all 5 = Neutral 10 = I strongly agree	
Filter	Conditional on (ccgic5 ≥ 10 or ccgic6 ≥ 4) and (ccgic2 ≥ 1.000.000 or ccgic3 ≥ 6)	

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